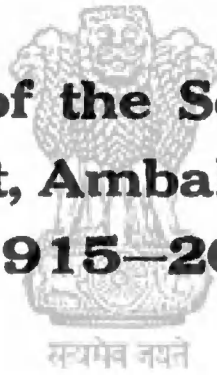

**Final Report of the Second Revised
Settlement, Ambala District,
1915–20.**



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FINAL REPORT
OF THE
SECOND REVISED SETTLEMENT
1915-20

OF THE
AMBALA DISTRICT

BY

R. B. WHITEHEAD,

Settlement Officer.

सत्यमेव जयते



Lahore :

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1921.

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No. 91—816—1.

FINANCIAL COMMISSIONERS' OFFICE:

Dated Simla, the 4th October 1921.

FROM

M. S. LEIGH, Esq., O.B.E., I.C.S.,

Senior Secretary to the Financial Commissioners, Punjab,

TO

THE REVENUE SECRETARY TO GOVERNMENT,

PUNJAB.

P. J. Fagan, Esq., C.S.I., I.C.S.

SIR,

I AM directed to forward a copy of the Final Settlement Report of the Ambala district by Mr. R. B. Whitehead, Settlement Officer, and to submit the following remarks of the Financial Commissioner.

2. The Ambala District is one of the smallest in the Province, but it straggles in an unwieldy manner along 78 miles of the Siwalik Range, and 40 miles out into the plains: it lies astride of the great Indian watershed, with the Sutlej on its western flank, and the Jumna on its eastern, while the Ghaggar divides it into two very different portions, one of them, comprising the Rupar and Kharar tahsils, and generally alluded to in the report as "the sub-division," being Punjabi in type, while the other, comprising the three eastern tahsils, Naraingarh, Jagadhri, and Ambala, is rather an outlying portion of Hindustan. The last-named tahsil lies out in the plain, but the others are typically submontane: the density of population is however only about 550 per square mile of cultivation. Physically the district is distinguishable, from north-east to south-west into hill, foot-hill, and plain: and cross-wise into river-valleys and upland. The Assessment Circles follow generally these distinctions, further refinement where necessary being introduced, either by circles or by fields, by dividing the plain area into loam (*Seoti*) and clay (*dakar*) and in the case of the Kharar tahsil by further sub-dividing the loam tract into a superior (*Seoti* I) and inferior (*Seoti* II) circle. There are also the usual classes of irrigated land, but the distinction of loam, clay and sand is all important, and as regards the last of these, the *chos* are the dominant factor. The magnitude and seriousness of the *cho* problem is fully realised by the Settlement Officer, as indeed by all concerned, except unfortunately those most vitally interested: the Financial Commissioner however hopes that even these last may learn to appreciate the benefits of a method of reclamation, which has given brilliant results in the Etawah district of the United Provinces, and is now as a result of the efforts of Mr. Casson being introduced in this district. The plan was not in contemplation when appendix IV of the report was written. The average rainfall ranges from 43" in Naraingarh to 30" in Kharar, decreasing from east to west, and also from hill to plain: it is generally ample in all parts, except in the clay tracts of the Ambala tahsil.

Of the total area, 63 per cent. is cultivated, and 11 per cent. more is recorded as culturable, though the report indicates that pasture land has already been reduced to the limit of safety. No more than 4 per cent. is irrigated, 3 by wells (two-thirds of this being in the Rupar Dhaia), and 1 by streams (a like proportion being in the Kharar Neli); a small area in Jagadhri is irrigated, somewhat unnecessarily, from the Western Jumna Canal, river-floods help 2 per cent., groves cover 1 per cent., and the remaining 56 per cent., or eight-ninths of the total cultivated area is under

ordinary dry cultivation—the true type of the district's agriculture. Manure must be used sparingly, and fallows of one harvest in two are indicated (though not in fact adhered to in the three eastern tahsils). Sowings indeed amount to 117 per cent. of the cultivated area, but slightly less than 100 per cent. is matured, the percentage of failure ranging from 12 in the Sub-Division (where cropping is methodical) to 21 in Ambala, in many parts of which the absence of irrigation, combined with a clay soil, necessitates a yearly gamble in unirrigated rice.

The high class staples amount to 68 per cent. of matured crops (wheat 28, gram 14, maize 11, cotton 7, rice 6, cane 2). Much of the *khari* has to be devoted to fodder crops. The agricultural population of the Sub-Division consists largely of efficient Jats and Sainis. Elsewhere, unbusiness-like Rajputs and vendee Baniyas predominate, and are largely dependent on Chamar cultivators. Communications are fair, though susceptible of great improvement, and produce can be marketed without difficulty. Proprietary holdings average 4 acres in the Sub-Division, and from 5 to 8 elsewhere. Little land is held in the colonies, and there is little income from military service: the district made but a poor response to the call for recruits, though in this respect, as in so many others, the Sub-Division out-distanced the eastern tahsils. Generally speaking, the district is dependent upon its own agricultural resources, which are in turn dependent upon the rainfall which is luckily almost secure.

3. The second chapter of the Report succinctly describes the peculiar manner in which the district gradually came under British rule, and the reason why, out of 1,801 estates now existing, the revenue is assigned to *jagirdars*, wholly or in part, in no less than 936. From summary settlement till 1860 the fiscal history is one of steady reduction. From that date on to the Revised Settlement (1882–1887), the revenue was paid without difficulty, having been reduced during the currency of the regular settlement from Rs. 10,40,000 to Rs. 9,98,000 (Morni included). From this figure it was raised by Messrs. Kensington and Douie to Rs. 11,44,000, i.e., by $14\frac{1}{2}$ per cent., with an incidence varying from Re. 1-5-5 in Ambala to Re. 1-14-11 in Rupar. (In the time of Akbar the incidence had averaged Re. 1-8-0 for the tract.) The new demand was estimated to absorb 88 per cent. of the half net assets, which were calculated with extreme caution. It was most carefully distributed (though the pitch of assessments was distinctly higher in Jagir than in Khalsa estates), and has been paid without difficulty, timely suspensions being freely granted: it has been necessary to remit only Rs. 51,725 during the whole period since 1887, and of this total, the Ambala tahsil accounts for Rs. 30,884. In spite of this fact, Government hesitated in 1904, and again in 1909, to revise the assessment and Mr. Whitehead did not begin operations till October 1915, when an enhancement of 25 per cent. had been forecasted.

4. Since last settlement, population has, owing to plague and influenza, decreased by 22 per cent. (the recent census indicates a loss of 8,000 since 1911), and the best cultivators have lost most heavily. It is only in a few estates, however, that there is any shortage of man-power, as the holding averages indicate. Ploughs show a decrease of 11 per cent. only, and cattle and carts have actually increased (though this statement does not take into account the effects of the recent drought): the cultivated and sown areas have fallen off very slightly, partly, no doubt, on account of the *chos*. It is impossible to compare the matured areas exactly, owing to changes in the standard of failure: they are probably almost unchanged. The quality of the cropping has improved somewhat in Ambala and Jagadhri, and fallen off slightly elsewhere. Thanks to the Alienation of Land Act, transfers no longer give cause for alarm: of the cultivated area only 4 per cent. has passed into the hands of non-agriculturists by sale since settlement, and only 6 per cent. is held by them under mortgage. The estimated debt of the district is, however, large and amounts to Rs. 193 lakhs, of which Rs. 125½ lakhs is secured on mortgages of land and the balance unsecured. It has to be remembered, however, that in respect of these large sums many, if not most, of the creditors are now themselves agriculturists. Land values have more than trebled, and range from 66 times the land revenue in Naraingarh to 162 times in Rupar. The rise in cash rents ranges from 54 per cent. in Jagadhri to 115 per cent. in Ambala:

these are now paid on nearly 10 per cent. of the cultivated area, and average Rs. 2-3-1 per acre : in the Sub-Division, the average is about Rs. 11. *Zabti* rents are said to have increased greatly, but no particulars are given. Kind rents do not seem to have altered materially in pitch. In all tahsils the proportion of land cultivated by owners and occupancy tenants has decreased, but in the Sub-Division the tenants-at-will are mostly the sturdier owners of other land. Communications have improved considerably since settlement, a railway, a monorail, a practicable canal and two important metalled roads having been made. But the chief ground for enhancement consists in the great rise in the value of produce, which was shown in the assessment reports to have been not less than 80 per cent. In paragraph 43 of the Report, Mr. Whitehead shows that the prices assumed in the produce estimate were less than half those prevailing when he wrote the report, and there has been a further rise since then.

5. The cycle of years selected as the basis of the produce estimate approximates closely to the apparent normal in each tahsil. The yields assumed represent some advance upon the caution of Mr. Kensington, but are certainly in all cases well within the truth, especially for *kharif* crops. The moderation of the assumed prices has already been noticed. The inclusion of the straw-value, previously ignored, requires no justification. Suitable, though probably not excessive, allowances have been made for payments to menials, etc., and in the case of Jagadhri for "casual" losses (meaning the losses of extremely casual landlords). The landlord's share varies from about 36 per cent. in Ambala and Naraingarh to about 45 per cent. in Rupar, and there does not seem to have been much change in practice since settlement. The half net assets estimate based on kind rents amounts to Rs. 28,50,000 (excluding Morni). Cash rents suggest a figure 4 lakhs higher, but these are often paid on selected lands. A calculation based on land values gives even higher results, but the Settlement Officer rightly does not lay much stress on so theoretical a guide. The estimate of "true half net assets" which was reached in the assessment reports after considering all these data, and adding a moderate valuation of the mango crop, amounted to Rs. 28,89,000 or, including Morni, Rs. 29,06,000. This gives an average incidence of practically Rs. 4 per acre cultivated or matured.

6. The following table shows the new assessments actually imposed, and compares them with the estimated true half net assets and the computed value of the gross produce :—

Tahsil.	Expiring demand.	True half net assets.	Assessment imposed.	Per cent. column 4 on column 3.	Per cent. column 4 on value of total produce.	Increase per cent. column 4 on column 2.	INCIDENCE PER ACRE OF NEW ASSESSMENT ON	
							Cultivated area.	Matured area.
	Rs.	Rs.	Rs.				Rs. A. P.	Rs. A. P.
Rupar	2,31,796	5,77,000	2,94,732	51	12.5	27	2 7 5	2 5 6
Kharar	2,55,836	7,27,000	3,39,544	46	12.25	32	2 3 9	2 2 9
Ambala	2,34,149	5,68,600	2,91,336	51	10.5	24	1 11 10	1 13 2
Naraingarh	1,80,955	4,27,800	2,24,345	52	10.75	24	1 11 7	1 12 1
Jagadhri	2,36,841	5,89,400	3,04,750	52	11	28	1 14 1	1 15 3
Total	11,89,577	29,89,800	14,54,757	50.3	11.25	28	1 15 10	2 0 1
Morni	7,970	...	8,303	...	...	10	1 12 6	1 9 6
Total District	11,47,547	...	14,63,560	...	...	28	1 15 10	2 0 0

These totals include a small sum for fixed canal advantage revenue in Jagadhri, remissible if the supply is permanently cut off (the payments mentioned at the end of paragraph 56 of the report have been abolished), also Rs. 26,885 deferred for 5 or 10 years, and Rs. 2,359 deferred on well certificates. The increase of 28 per cent., though slightly in excess of the forecast (25 per cent.), was not such as to require the orders of the Government of India : in no tahsil was the 33 per cent. limit exceeded. It will be seen that Government is only taking a quarter of the net assets, or half of its maximum legal share : at the prices now current, a maund of wheat, gram, or bajra would pay the revenue of an acre of land for six harvests : it is hardly to be expected that a maund of wheat will ever again be insufficient to pay the revenue of an acre for a year. The best proof that the new assessment is regarded as lenient is to be found in the fact that there were only 38 appeals to the Commissioner (of which only one succeeded), and none at all to the Financial Commissioner. These results are of interest with reference to current criticisms of the so-called harsh assessment policy of the Punjab Government.

7. In paragraph 59 of the report Mr. Whitehead has included, as required by paragraph 550 of the Settlement Manual, an abstract of the note submitted with the Detailed Village Assessment statements showing the principles on which the demand was distributed over estates. It is clear from paragraph 59 that the work was done with care and judgment and the statements indicate that the need for an adequate degree of discrimination as between estates has been kept in view. It will be noted that he accepted 76 out of 553 objections. His opinion (paragraph 58) that there are now no appreciable inequalities between tahsils or estates may be accepted. The distribution over holdings was unusually straightforward and indicates the comparatively small importance which is in practice attached by land revenue payers to distinctions of soil.

8. A full account of the revision of the record-of-rights, a most important aspect of settlement work, is given in chapter III of the report. It was carried out with care and thoroughness. The enormous number of mutations decided, namely, 112,000, is remarkable, while the revenue case work was very heavy as is shown in paragraph 61. Mr. Whitehead was fortunate in finding maps accurate enough for correction in all estates except 104 in the river beds, and few disputed boundaries. Commendable punctuality was achieved in the completion of the new records, the village inspections, the submission of the Assessment Reports and the introduction of the new demands. Only in Ambala and Naraingarh tahsils, drought intervened to necessitate one year's delay as regards the last.

9. In a district which has 43 per cent. of its revenue assigned, *jagir* questions are bound to loom large : it says much for the excellence of Mr. Kensington's work that his successor had to make no reference to Government on the subject. The report brings out the interesting fact that a *pattidari jagirdar* will cling to the prestige conferred by that status though it brings him but two annas a year and may diminish his chances of marriage. The Financial Commissioner does not propose to take any action on the somewhat indefinite suggestions made in paragraph 87 of the report. It will be for the local officers to submit specific proposals if they find it necessary to do so. In the case of the smaller *Muafis* Mr. Whitehead appears to have made judicious use of the discretion given him by paragraph 196 (3) of the Land Administration Manual. The *Zaildari-Inamkhori* question has at last, after protracted discussion, well summarised in the report, been settled in favour of a satisfactorily graded system on normal lines, assigned revenue bearing its fair share of the cost.

As to *lambardars*, it is clear from paragraph 71 of the report that they still cling tenaciously to their position, regardless of the exiguity of the emoluments. The average of these can be raised only by the reduction of redundant or unnecessary posts of which as in other districts there are doubtless many. The matter is one which needs continuous attention in accordance with the instructions issued in 1919 and embodied in paragraphs 329—332 of the Land Administration Manual. It is to be regretted that Mr. Whitehead

was not able to find time at the end of the settlement to deal with the subject in the prescribed manner.

The scale of enhancement for occupancy rents, suggested in paragraph 72, is reasonable, and may be commended to the notice of revenue courts for guidance.

The question of a record-of-rights for Kasauli Cantonment is still being considered by Government.

It is for the consideration of the local officers whether any attempt should be made to buy out the perpetual pensioners in the Ambala Cantonment mentioned in paragraph 73 of the report: their attention will be drawn to the matter.

Mr. Whitehead has not submitted a formal scheme for working suspensions and remissions, but the Financial Commissioner has had one compiled for the Ambala tahsil on the lines of paragraph 75 of the report.

The dates for payment of land revenue have been fixed by the Financial Commissioner as follows :—

Kharif from 15th January to 10th February.

Rabi from 15th June to 15th July.

The Deputy Commissioner has been authorised to frame a roster of villages, including Morni, ranging between these dates.

10. The cost of re-settlement to Government was less than 83 per cent. of the estimate, and will be almost wholly recovered from the enhanced *Khalsa* demand (practically rupees two lakhs) in two years. The *Jagirdars*, who gain more than a lakh of rupees a year from the operations, have only had to pay Rs. 40,000 towards their cost. The settlement took 4½ years to complete according to plan. Considering that the district comprises five tahsils in addition to the Morni tract the result is a creditable example of the celerity with which modern settlement work is carried out.

Cost of settlement operations.

11. Cesses should continue to be levied at the present rates until varied by competent authority.

Cesses.

12. The orders of Government are required as to the term of settlement. The Financial Commissioner agrees with the Settlement Officer that a 30-year term is clearly indicated as appropriate.

Term of settlement.

13. The commendation bestowed by Mr. Whitehead on the work done by Messrs. Cowan and Beazley and by Malik Muhammad Hayat Khan is thoroughly well deserved, and he is to be congratulated on having been so well served by the rest of the settlement staff: the Financial Commissioner is pleased to note that their exemplary behaviour has not passed unrecognised. Mr. Whitehead's own work has always reached a high standard of excellence and he deserves the greatest credit for the punctuality, accuracy, fairness and sympathy with the people displayed in all his operations at every stage and for his skill in presenting his data and conclusions. The report under review is a very good sample of his work.

Notice of officers.

14. The present Commissioner has intimated that he has no remarks to make on the report.

I have, &c.,

M. S. LEIGH,

Senior Secy. to the Finl. Comrs., Punjab.



सत्यमेव जयते

FROM

D. J. BOYD, Esq., I.C.S.,

Revenue Secretary to Government, Punjab,

TO

THE SENIOR SECRETARY TO THE FINANCIAL

COMMISSIONERS, PUNJAB.

Dated Lahore, the 30th November 1921.

Revenue & Agriculture.

Revenue.

SIR,

I AM directed to refer to your letter No. 91—816-1, dated the 4th October 1921, forwarding a copy of the Final Settlement Report of the Ambala District by Mr. R. B. Whitehead, together with the Financial Commissioner's Review.

2. Lying right astride the great north Indian watershed between the Sutlej and the Jumna, and almost cut in half at the same point by a wedge of the eastern Punjab States, the district falls into two divisions, distinct both geographically and in the character and composition of the population. The eastern half faces towards and is really part of Hindustan; its predominant tribe is the Rajput and the standard of agriculture is low, the Rajput and Baniya landowners being inclined to leave cultivation to hired *chamars*. The western half, consisting of the Rupar and Kharar Tahsils, has all its affinities with the Punjab; the predominant tribe is the Jat, and the standard of agriculture is high, the land being cultivated by a vigorous and efficient race of peasant proprietors. Dry cultivation is the type of the district's agriculture. Only 4 per cent. of the cultivated area is irrigated, 1 per cent. by streams and 3 per cent. by wells. The subsoil water level is too low to be reached in sufficient quantity by wells or ordinary borings, and Mr. Whitehead strongly recommends artesian borings. Irrigation from the existing canals at each end of the district is also practically impossible owing to hill torrents and the configuration of the countryside. But the district is saved by an abundant and secure rainfall, varying from 43 inches in Naraingarh to 30 inches in Kharar. The great drawback is the existence of *chos* which extend along the whole length of the district and spread sand and desolation far and wide. The preventive measures hitherto adopted have attained only a moderate degree of success owing to their great cost but there is ground for anticipating better results from the introduction of the method of reclamation which has been so successful in the Etawah District of the United Provinces.

3. Owing probably, in the main, to the regular and propitious rainfall, both the previous settlements of the district were on the whole successful. The first regular settlement of 1852, though it had to be modified at the start, worked satisfactorily after the high rise in the prices of raw produce which set in about 1860. This and a moderate growth in resources, justified an increase of the demand at the 1887 revision by 14½ per cent. to Rs. 11,44,000. The proportion taken of the half-net assets was somewhat high, but this was compensated for by the extremely low pitch of the net assets estimate.

Consequently, though the period that followed the first revision was for the most part one of decline in population and cultivation, the demand was paid without difficulty, and only half a lakh of rupees had to be remitted throughout the currency of the settlement. When, however, the first forecast report for the present settlement was prepared in 1904, further revision was postponed. A similar fate overtook the forecast of 1909-10. At this stage, however, a great change took place in the economic situation. Prices advanced abnormally during the years before the war and at the 1915 forecast, a revision of the settlement was decided on, with a confident estimate of a 25 per cent. increase.

4. The actual demand now imposed is Rs. 14,63,560 ; representing an increase of 28 per cent. on that of the expiring settlement. There has been, no doubt, a very slight decline in cultivation and a much larger one in population and indebtedness is heavy ; but it must be remembered that a large proportion of the creditors are, as pointed out by the Financial Commissioners, themselves agriculturists, and the general prosperity of the district is indicated by the very large increase in land values which have more than trebled, and in cash rents which have risen by as much as from 54 per cent. in Jagadhri to 115 per cent. in Ambala. It is, in fact, the enormous rise in these values and in the prices of raw produce, which is the main ground for the present enhancement of the revenue. The undoubted increase in the cost of production is greatly outweighed by a rise in prices of at the very least 80 per cent. when the settlement started, and considerably more now ; and on this score alone an enhancement of 30 to 40 per cent. would be amply justified. Government has, however, been satisfied with an increase of 28 per cent. ; the demand imposed is only half of the amount to which it is theoretically entitled, and the peasant is now only paying a revenue of Rs. 2 on every acre of cultivated land. As the Financial Commissioner has pointed out, a maund of grain will pay the revenue of an acre for six harvests. In view of this fact, the extreme lenience of the land revenue must be patent to all.

5. The new assessments were well received, only 38 appeals being made to the Commissioner (of which one succeeded), and none to the Financial Commissioner. The Governor-in-Council agrees with Mr. Fagan that the distribution of the revenue over estates and holdings was done with care, judgment and success. He accepts the recommendation of the Financial Commissioner and the Settlement Officer that the term of settlement should be fixed at 30 years.

6. A special feature of the district is the large proportion (43 per cent.) of the revenue, which is assigned. The Punjab Government are interested to see that the present settlement operations provided a further proof (if such were needed) of the excellence of Mr. Kensington's work in the registration of the Ambala jagirs. The settlement of the Zaildari-Inamkhori question is a satisfactory achievement.

7. Despite very heavy work in the initial stages, the settlement was carried through with remarkable punctuality and despatch and at considerably less than the estimated cost. The least possible inconvenience was caused to the cultivators and the Governor in Council agrees with the encomiums passed by the Financial Commissioner on the high standard of Mr. Whitehead's work, his fairness and his sympathy with the people and the excellence of his report. He notes with pleasure the commendation which the Settlement Officer has bestowed on the work of his Assistant and Extra Assistant Settlement Officers and on the staff generally.

I have, etc.,

D. J. BOYD,

Revenue Secretary to Government, Punjab.

Final Report

OF THE

Second Revised Settlement (1915—20)

OF THE

Ambala District.

CHAPTER I—GENERAL DESCRIPTION.

1. This Final Report describes the operations of the second revised land revenue Settlement of the Ambala District of the Punjab which commenced on the 1st October 1915, and terminated on the 31st March 1920. During this period six assessment reports have been submitted, those of the five Tahsils—Rupar, Kharar, Ambala, Naraingarh and Jagadhri—and of the Morni Hill Tract of the Naraingarh Tahsil.

The Regular Settlement took place in the year 1852 under the direction of Mr. Philip Melvill and Mr. Wynyard, and is described in the report on the revised Settlement of the Southern Pargunahs of the district of Ambala in the Cis-Sutlej States by W. Wynyard, B.C.S., Lahore, 1859, and in Mr. Melvill's North Ambala Report.

The first revised Settlement was concluded in 1887-88. Four out of the five Tahsils constituting the present Ambala District were settled by Mr. (latterly Sir Alfred) Kensington and the fifth (Jagadhri) was settled by Mr. (now Sir James) Douie. The assessment operations are described in the five Tahsil Reports and the separate report on the Morni Hill Tract of the Naraingarh Tahsil, and there were two Final Settlement Reports—Mr. Kensington's Settlement Report of the Ambala District, 1893, and Mr. Douie's Karnal-Ambala Settlement Report, 1891. A sixth Tahsil, Pipli, was settled by Mr. Douie but has been separated from Ambala and included in Karnal District since the 1887 Settlement.

The operations of the second revised Settlement were due to commence in the year 1905 but were twice postponed in the interests of the revenue payers. The work actually began in the year 1915 in the Rupar and Kharar Tahsils only and I have been Settlement Officer throughout. The three remaining Tahsils came under settlement in October 1916 and Mr. H. M. Cowan, I.C.S., was appointed Assistant Settlement Officer for the Naraingarh and Jagadhri Tahsils. Owing to illness he was succeeded a year later by Mr. J. G. Beazley, I.C.S., who was transferred in June 1918. Mr. Beazley has been responsible for the assessment and has written the reports of the Naraingarh Tahsil and the Naraingarh Morni Hill Tract. I have done this work for the other four Tahsils.

Malik Muhammad Hayat Khan Nun was the Extra Assistant Settlement Officer throughout till his transfer in May 1919. He was succeeded by Sheikh Nur Muhammad.

2. The Ambala District consists of the submontane tract bordering the Siwalik Hills from the River Jamna to the River Sutlej and of an adjoining area composed of the Ambala Tahsil which lies somewhat further away from the Hills. The rule of fixed boundaries prevails along both rivers. The Siwalik Hills in conformity with the general direction of the Himalaya Mountains in this locality run in a north-westerly direction and the rivers and torrents debouch from the hills at approximately right angles to this general line, so the submontane tract from the Jamna to the Sutlej throughout its length of some seventy-eight miles is scoured at frequent intervals by the wide and shifting sandy beds of *chos* or hill torrents. Only one of these, the Ghaggar River, is a perennial stream. Its waters if they did not lose themselves in the

Boundaries and dimensions.

sands of the Bikaner desert would eventually reach the Arabian Sea while the Jamna River flows by the means of the Ganges into the Bay of Bengal, so the Ambala District contains the watershed of Northern India. The Ghaggar lies nearer to the Sutlej than the Jamna and divides the District into two unequal parts which differ widely in race, manners, customs and agricultural efficiency. That to the west of the Ghaggar has affinities with the Punjab proper while the remainder is more akin to Hindustan. The smaller portion of the wasp-waisted tract composing the Ambala District is the Rupar Sub-division lying between the Ghaggar and the Sutlej with its two Tahsils, Rupar and Kharar. Towards the north and east the boundary runs along the Siwalik watershed with Nalagarh State and the Pinjaur Tahsil of the Patiala State on the other side. To the north-west across the Sutlej lie the Una and Garhshankar Tahsils of Hoshiarpur District. On the west and south are the Samrala Tahsil of Ludhiana District and the Patiala Tahsils of Sirhind and Banur. Near the Ghaggar is a part of Kalsia State centred on Dera Bassi with an outlying patch south-west of Kharar town, while to the east of the Ghaggar are two isolated bits of Kharar Tahsil based upon Mubarakpur and Bhareli, respectively. In the *dun* or vale between the Siwalik Hills and the Himalays proper is Kalka, and in the Himalayas above Kalka are Kasauli and Sanawar. These three places have been transferred from the Simla to the Ambala District since the 1887 Settlement. The Rupar Sub-division runs down from the thirty-mile long crest line of the Siwaliks into the flat alluvial plain with an average width of twenty miles.

The larger portion of the Ambala District is situated between the Jamna and Ghaggar Rivers and is composed of two submontane Tahsils, Jagadhri and Naraingarh, with the Ambala Tahsil lying away from the hills. The length of the Siwalik base-line from the Jamna to the Ghaggar is forty-eight miles and the average width of the tract is between thirty and forty miles. The Sirmoor (Nahan) State marches with the northern boundary while east of the Jamna is the Saharanpur District of the United Provinces. Along the south is the Thanesar Tahsil of Karnal District while to the west lie the Patiala Tahsils of Ghanaur, Rajpura, Banur and Pinjaur with parts of Kharar Tahsil and the Dera Bassi Tahsil of Kalsia State. The main part of Kalsia with its capital Chhachhrauli is scattered over the east of Ambala District and there are two islands of Patiala territory in the Ambala Tahsil south of Ambala Cantonment. Like the Rupar Sub-division the tract formed of the three south-eastern Tahsils runs down into the flat alluvial plain from the Siwalik Hills. Apart from the Kalesar reserved Government Forest (attached to the Simla Forest Division), the Siwalik line from Tajawala to Khizri (outside though geographically part of Kalesar), and the Nagli Khoi, the Jagadhri Tahsil does not penetrate into the Siwalik Hills; these generally belong to Sirmoor or Kalsia. On the contrary the Morni Hill Tract of the Naraingarh Tahsil not only contains all the Siwalik area in that vicinity but also includes parts of two Himalayan ranges lying north and south of the upper reaches of the Ghaggar River. The northern range is between four and five thousand feet in height and the southern range is a thousand feet lower.

Six new estates (Kalka, Kurari, Kasauli, Sanawar, Ambala City, Kalesar Forest) have been constituted during Settlement operations while Ambala Cantonment and Bir Ghaggar (Kharar Tahsil) were created *mouzas* in 1909-10. In consequence of these changes the district now contains 1801 villages. The total area of Ambala District as brought out by the Settlement measurements is 1,867 square miles of which 1,150 square miles are cultivated. The population in 1911 was 69,970. The Appendix contains particulars by Tahsils.

3. The Siwalik Hills are composed of very friable and only partially

consolidated sandstone containing bands of clay, sand and conglomerate with frequent boulder and pebble beds. Apart from the Government Forest at Kalesar no other part of the British Siwaliks has been protected and they present a sorry contrast with those portions in the Patiala, Kalsia and Sirmoor States as the latter have been carefully conserved. The imprudent activities of the zamindar combined with unrestrained grazing have turned the range into a desert and great damage has been done by the *chos* or sand torrents to the fertile plains below. I will make a brief reference to remedial measures in my paragraph on *chos*—paragraph 6.

As viewed from the plains the Siwalik chain is dwarfed by the Himalayan ranges behind it. The 6,000-foot Kasauli hill is a prominent object above the Kharar Tahsil and the Simla hill of Jakko is visible from many places in the sub-division. From most parts of the rest of the District splendid views are obtained of the imposing Chor peak with its attendant ranges and of the high snowy range behind Mussoorie.

The plains portion of the District is level and fertile ; it is diversified to its disadvantage by the wide and shifting sandy beds of the hill torrents which have had a profound influence in shaping the characteristics of the soil. On the east and west respectively are the rivers Jamna and Sutlej. The Headworks of the Western Jamna Canal are at Tajawala on the Jamna and those of the Sirhind Canal at Rupar on the Sutlej. Both canals traverse the District with a little irrigation from the Western Jamna Canal only.

The District is well wooded on the whole and mango groves are conspicuous.

The climate is good except in the riverain tracts and the malarial *Nelli* circle of the Kharar Tahsil.

4. The natural divisions of the District are mainly due to the presence of the Siwalik Hills and the two large rivers, the Jamna and the Sutlej. There is the broken Siwalik area called Ghar in all the four submontane Tahsils except Jagadhri where it is known as Kandi, and beneath this lies the flat alluvial plain traversed by frequent torrent beds. In addition to these two divisions running parallel with the hills there are the two extensive riverain tracts, the Jamna Khadar and the Sutlej Bet. The vicinity of the third river, the Ghaggar, calls for special consideration because in the Kharar Tahsil this tract is extensively irrigated by ducts from that stream. Hence we have the Ghar assessment circles in the Rupar, Kharar and Naraingarh Tahsils and the Kandi in Jagadhri. The land whether Ghar or Kandi is similar in situation and character throughout the District being the sandy, broken area along the foot of and occasionally penetrating into the Siwalik chain.

Below the Ghar and Kandi comes the fertile alluvial plain which for purposes of assessment has been divided into the following assessment circles. In Rupar it is called Dhaia because it is separated from the Sutlej riverain tracts by the *dha* or old high bank of the river. The riverain tract itself forms the Rupar Bet circle and 23 villages lying partly in the Ghar and partly in the Bet are called Ghar-Bet. There is a discrimination of *barani* land in the Ghar-Bet circle into *ghar barani* and *bet barani*.

The Kharar plain is composed of five circles. There is a fairly definite clay area in the south-east corner of the Tahsil which is called Dakar after the local word for clay. I have already mentioned the irrigated tract near the Ghaggar and this is known as the Nelli circle. It lies to the west of the East Indian Railway between Ghaggar and Chandigarh Stations and is easily identified by its rice fields, palm trees and dense undergrowth. Malaria is prevalent in the rains. The remainder of the Kharar plain is called Seoti (meaning loam) and the superior loam villages are separated from the rest so there are two Seoti circles. Thirteen of the loam estates form the tiny Charsa circle for the sole reason that well irrigation is prominent in this tract. I am now of opinion that the two Seoti circles and the Charsa could have been incorporated into one assessment circle called Kharar Seoti. The isolated parts of the Tahsil east of the Ghaggar belong to the second Seoti and the Ghar circles. The addition of Kalka, Kurari, Kasauli and Sanawar to the Kharar Tahsil since last Settlement has necessitated the creation of a new assessment circle called Pahar. There are now no less than seven assessment circles in Kharar.

The 1887 circles have remained intact throughout the Rupar Sub-division, the only change being the creation of the Kharar Pahar circle. Apart from the usual irrigated classes of land and the Ghar-Bet class differentiation already mentioned there is no soil discrimination inside the circles either in the Rupar or the Kharar Tahsil.

Mr. Kensington's assessment circles in the plains portion of Naraingarh and Ambala Tahsils were mainly based as in Kharar on soil differences. In the Naraingarh plain there were the loam (Seoti) and clay (Dakar) circles

with a separate broken tract much cut up by small ravines called the Darrar circle (from the local appellation for land of this character). The Ambala Tahsil was merely divided into loam and clay estates though the latter were formed into two separate circles called the Ambala Dakar and the Mulana Dakar. These circles have now received the following treatment. In the Naraingarh Tahsil the Darrar has been amalgamated with the Ghar and the Seoti with the Dakar, the new circles being called Ghar and Seoti respectively. The entire Ambala Tahsil is now a single assessment circle. At the same time a more exact and scientific treatment of the estates is facilitated by a discrimination of *barani* soil throughout the Ambala Tahsil and the new Seoti circle of the Naraingarh Tahsil into loam (*seoti*) and clay (*dakar*). The Morni Ghar and Pahar remain unchanged.

Mr. Douie had six assessment circles in the Jagadhri Tahsil. There was the Kandi or hilly tract. The Jamna riverain area was divided into the Northern Jamna Khadar and the Southern Jamna Khadar. A well-defined tract along the valleys of the large Som and Boli torrents with an eastern extension towards Tajawala containing canal irrigation was called the Som Khadar circle. Finally the central plain was divided into Bangar to the east and north, and a clay area or Dahr on the west; the word *dahr* is more usual in Jagadhri for clay than *dakar*. The only change that has now taken place in the Jagadhri Tahsil is the amalgamation of the Bangar and Dahr circles into a single Bangar circle with a soil discrimination throughout the new circle into loam and clay.

The differentiation of *barani* soil into loam and clay throughout the Ambala Tahsil and in the Naraingarh Seoti and the Jagadhri Bangar had to be carried out field by field at the cost of considerable time and trouble and called for much supervision.

Outside the Kharar Pahar circle and the Morni Hill Tract there are the usual classes of irrigated and unirrigated cultivated land as follows :—

Irrigated.

- (1) *Chahi*.—Land irrigated from wells.
- (2) *Abi*.—Land irrigated from streams or tanks by lift or flow.
- (3) *Nahri*.—Land irrigated from the Western Jamna Canal.

For the purposes of classes (1) and (2) land has been regarded as regularly irrigated if it has received water in one of the last four harvests (Rupar, Kharar, Naraingarh, Ambala) or in two out of the last eight harvests (Jagadhri) preceding the season of measurement provided that the means of irrigation are still in existence.

Unirrigated.

- (1) *Sailab*.—Alluvial land in the vicinity of rivers and streams which is naturally moist.
- (2) *Barani*.—Land wholly dependent on the rainfall. There is a loam and clay soil discrimination in the Ambala Tahsil, the Jagadhri Bangar circle and the Naraingarh Seoti circle, and a class differentiation between *ghar barani* and *bet barani* in the Rupar Ghar Bet circle.

The kinds of soils are sand (*ret*, *bhur*, *bhud*), loam (*seoti*) and clay (*dakar*, *dahr*). The people do not recognise finer divisions. There is no separate class for manured land.

Uncultivated land falls into the usual divisions *banjar jadid* (new fallow), *banjar qadim* (old fallow), *ghair mumkin* (unculturable waste).

There are special classes of cultivated land in the Kharar Pahar circle and the Morni Hill Tract of Naraingarh Tahsil.

KHARAR PAHAR CIRCLE.

Kul, 1st Class; *Kul*, 2nd Class; *Lehri*, 1st Class; *Lehri*, 2nd Class; *Changar*.

The term *kul* is applied to irrigated manured land, while *lehri* is manured but not irrigated; *changar* is unmanured *barani*.

MORNI HILL TRACT.

Kulahu; Obar I; Obar II; Khil.

Kulahu is irrigated land. *Obar I* is manured *barani* land and *Obar II* is unirrigated land only occasionally manured. The term *Khil* is applied to out-lying stony untterraced lands which are only cropped every second or third year.

5. There is more rain on the east of the District than the west, and this consideration together with the distance from the hills are the main factors determining the amount of rain at any given place. The annual rainfall which amounts to quite fifty inches along the Jagadhri Siwaliks is probably ten inches less in the Rupar portion, and Jagadhri itself gets five inches more than Rupar

Tahsil.	Average annual rainfall.	June to September	Rest of year.
Rupar	32.43	25.63	6.75
Kharar	30.38	23.84	6.54
Ambala	31.63	24.98	6.65
Naraingarh	42.73	35.44	7.29
Jagadhri	37.42	31.47	5.95

while the Naraingarh fall is five inches in excess of that at Jagadhri. I give in the margin a table showing the average annual rainfall at each of the Tahsils for the twenty-nine year period June 1887 to May 1916. The fall varies from 30½ inches at Kharar to 42¾ inches at Naraingarh. The monsoon rains are considerably more dependable than those in the cold weather; they commence in the latter half of June, and July and August are the two wet months. As regards the monthly totals there is a normal expectation of quite five inches in September which is enough to mature the Kharif and to ensure the sowing of the Rabi harvest. The average monthly fall in January and in February is about two inches and this is sufficient for the wheat crop. Rainfall is reliable both in amount and distribution and bad years are few and far between. The District with the exception of the clay villages of the Ambala Tahsil may be regarded as a secure tract. The rainfall statistics are not unfavourable for the Ambala Tahsil but its comparative insecurity is due to the large areas of hard clay, the weakness of the proprietary body and an almost total lack of protection by irrigation.

I give the maximum and minimum figures for the twenty-nine year period under discussion:—

Tahsil.	MAXIMUM.		MINIMUM.		YEAR 1918-19.
	Year.	Inches.	Year.	Inches.	Inches.
Rupar	1900-01	65.39	1899-1900	16.54	15.09
Kharar	1900-01	67.92	1911-12	18.01	17.28
Ambala	1888-89	53.13	1899-1900	18.75	13.41
Naraingarh	1910-11	70.25	1911-12	22.73	23.62
Jagadhri	1914-15	57.51	1907-08	20.46	16.35

There is a marked tendency for a year of exceptionally heavy rainfall to precede or follow a very bad year. At the 1887 Settlement Mr. Kensington's own experience included both the lightest and the heaviest falls for any year in the entire series of twenty-five years considered by him (1863 to 1887) and in other respects the seasons were exceptional during his settlement operations. History has repeated itself in this respect. The wet summers of 1916 and 1917 were succeeded by phenomenally dry winters. In the year 1917 there was almost constant rain at Ambala from the middle of April to the end of October and the wheat and gram sprouted on the threshing floors. Then came the disastrous year 1918 with its almost complete failure of the monsoon followed by the terrible influenza epidemic which swept away almost one-tenth of the total population.

6. The fertile plains of the Ambala District are much afflicted by the hill torrents (*chos* or *raos*) which occur at frequent intervals between the Jamna and the Sutlej. The most important of these in each Tahsil are the following :—

Rupar.—The Budki and Siswan Nadis conducted to the River Sutlej by super-passages over the Sirhind Canal.

Kharar.—The Sirhind and Patiala Nadis ; the Sukhna Cho forms the western boundary of the Neli circle.

Ambala and Naraingarh.—The Tangri and the Markanda. The Tangri has recently caused immense damage just to the east of Ambala Cantonment. I look upon it as the most unstable and destructive torrent in the District. Its catchment area is the Morni Siwalik region which is in a very bad state of denudation.

Jagadhri.—The Som and the Boli Nadis conducted by a level crossing at Dadupur through the Western Jamna Canal to the River Jamna ; the Bilaspur Sarusti and the Chautang.

There are two Sarustis in the Jagadhri Tahsil, a small hill torrent flowing past Bilaspur and joining the Chautang six miles below that place, and an insignificant ditch-like stream which drains the paddy fields of Kalawar and passes close to Mustafabad. The latter is probably the holy Sarusti of the sacred books.

In addition to the hill torrents there are small streams which rise in the plains and being free from sand occupy narrow permanent beds. Examples are the Joda and Amri in the Naraingarh Tahsil, and the Mustafabad Sarusti, Rakshi, Lendi and Pandoi in Jagadhri.

Captain W. E. Baker, Superintendent of Canals West of Jamna, wrote in 1841—"The existence of extensive rivers along the now deserted channels of the Chittung and Cuggur sufficiently prove a former better condition of these rivers and lead to the interesting enquiry how their deterioration has been caused and whether or not it be still progressive ;what few observations I have been enabled to make of the river beds between the Jamna and the Sutlej have led me to attribute a great part of the effect to natural causes. The Sub-Himalayan range, consisting of unconsolidated strata and therefore liable to rapid degradation, pours down on the plains with its drainage an immense quantity of sand so as to form a talus of thirsty soil gradually extending from its base and annually increasing in depth and in capacity of absorption. This effect is particularly conspicuous in the channels, some of which from being narrow and well defined have even within traditional record become wide and sandy beds. The heavier sediment being chiefly deposited near the hills, the clay and lighter particles of sand are carried onwards and produce a somewhat similar effect to a distance of forty or fifty miles"—Letter No. 212, dated Dadoopoor, September 17th, 1841, to the Superintending Engineer, Meerut (printed in Reports on Projected canals in the Dehli Territory, Allahabad, Mission Press). But why should the channels have become wide and sandy beds even within traditional record of 1841 ? This was plainly the effect of the increasing denudation of the Siwalik Hills which possibly received its first considerable impulse when the Gujar inhabitants were converted to Islam. The Hindu burns cow-dung and venerates trees while the Muhammadan uses wood fuel. After 1841 with the rapid opening up of the country and the constantly increasing demand for wood and fuel the destruction of tree and plant growth became progressively more speedy and more thorough.

The results of conceding uncontrolled power over excess waste land to the shortsighted zamindars have been specially deplorable in the case of the Siwalik Hills owing to their soft and friable character. Most of the British Siwaliks have become a literal desert. The *chos* deposit vast quantities of sand over the plains below the hills and carry ruin and destruction far and wide. However since the year 1915 measures have been taken under the Chos Act (Punjab Act II of 1900) for the protection of the Siwaliks in the Rupar Sub-division. It is hoped that these operations will be extended to the British Siwalik tracts in the remainder of the District. This matter is one of the utmost importance for the future of Ambala. The Appendix contains a sketch of what has been done and what is proposed for the near future.

7. In the matter of the people as in nearly every other respect it is necessary to differentiate between the Rupar Sub-Division with its Punjab affinities and the remainder of the District which is more akin to Hindustan. The following table gives the percentages of cultivated land owned by the different castes in each Tahsil :—

Tribe.	Rupar.	Kharar.	Ambala.	Naraingarh.	Jagadhri.	Morni.
Jat	55	51	37	17	25	...
Rajput	10	21	34	37	23	1
Gujar	■	■	3	12	12	15
Arain	2	...	6	4	■	...
Saini	9	6	...	...	...	...
Saiyad and Sheikh	1	■	3	6	...	6
Mali ... ..	...	...	■	■	3	...
Kamboh ... ..	...	...	...	...	3	...
Koli ... ..	...	...	...	...	...	2
Baniya ... ..	...	...	...	4	13	...
Kanet ... ..	...	...	...	...	...	44
Brahman ... ..	...	...	...	...	...	22
Others	7	10	12	9	13	10
Shamilat and Abadi	7	5	3	6	3	...

The Sub-division is exceptionally strong in its proprietary body. The Rupar and Kharar Tahsils are the home of a vigorous Jat peasantry who hold fifty-three per cent. of total cultivation ; the Jats are energetic and well off and the appearance of the country is decidedly prosperous. The Muhammadan Jats of the Sutlej Bet are as usual feebler than their Hindu brethren in the uplands but they are a steady inoffensive set of men and have to work their land under unfavourable climatic conditions.

Sixteen per cent. of the Sub-division is held by Rajputs who are usually Muhammadans. Their villages are still characterised by the amount of land let for tillage to more energetic farmers and by the relatively large alienated areas but the Rajput in response to increasing economic stimulus and to the good example set by the Jat has undoubtedly improved both in husbandry and domestic economy though handicapped by the fact that his women folk do not help him in the field.

In respect to the area of cultivated land owned by them Gujars and Sainis come next to the Rajputs with seven per cent. each. The Gujars are specially numerous in the hill tracts and in the north Sutlej Bet and are moderate agriculturists.

The Sainis are characteristic of the Sub-division. They are one of the gardening castes and in the eastern submontane Punjab fill the place taken by the Mali in the Jamna zone and the Arain in the remainder of the Province. The Sainis are important in the Sutlej Bet and own several entire villages just north of Rupar. Their husbandry is first class and a Saini village has always got its *chahi* area covered with valuable garden crops. The Sainis are pushing and energetic, have social ambitions, freely take military service and practically all have become Sikhs. They are a prolific race, their holdings are small and they make the most of their land by intensive agriculture.

The three south-eastern Tahsils are weak compared with the Rupar Sub-division and it was for their sake that the present settlement operations were twice postponed. The percentage of total cultivation held by efficient agriculturists (Jats, Arains, Sainis, Malis, Kambohs) varies as follows :—Rupar, 66 ; Kharar, 57 ; Ambala, 45 ; Naraingarh, 26 ; Jagadhri, 36,

The Jats are very closely followed in Ambala and Jagadhri by the Rajputs but the latter considerably predominate in Naraingarh. In Jagadhri the Jats constitute only seven per cent. of total population but own one quarter of cultivation. They are industrious, steady and thrifty throughout the three south-eastern Tahsils but not so efficient as in the Sub-division. Muhammadan Jats are very rare in the east of the District and only 16 per cent. of the Jats in Naraingarh are Sikhs as against 23 per cent in Jagadhri, 32 in Ambala, 65 in Kharar and 68 in Rupar.

The Rajputs in all three Tahsils are usually Muhammadans. They still cling to their traditions as men of descent and leisure, their women are strictly secluded and do not even draw water at the well, so they are largely dependent on the efforts of their Chamar labourers.

The Arains and Malis take the place held in the Sub-division by the Sainis and are professional gardeners.

Baniyas own no less than 13 per cent. of total cultivated area in Jagadhri and take third place in that Tahsil after the Jats and Rajputs, a very striking feature of the tract. More than one-third of cultivation is held by Rajputs and Baniyas; the former do but little farming with their own hands and the latter do none at all. These two classes depend upon their farm labourers and fortunately the supply equals the demand. Chamars are very numerous and comprise no less than 21½ per cent. of total population against 15 in Naraingarh, 12 in Ambala, 12 in Rupar and 11 in Kharar. Jagadhri contains an enormous population of Brahmans, Baniyas, menials and artisans.

The general standard of cultivation in the three south-easterly Tahsils is moderate. The aristocratic traditions and the slack farming in the Rajput estates affect the tone of the entire tract. The Arains, Malis and Jats are noticeably less efficient and more extravagant than their brethren in the Sub-division. Even the Gujar women are often strictly secluded. The women-folk of the Jats usually give no further assistance in agriculture beyond such light tasks as drawing water at the well, carrying meals out to the fields and cotton picking.

In short the tone is set in the Sub-division by the Jats and in the three remaining Tahsils by the Rajputs.

The Kanet, Brahman and Gujar population of the Morni Hill Tract appears to be a typical hill distribution.

8. The method of cultivation differs in irrigated and unirrigated, manured and unmanured soils. Two crops in the year can be taken from irrigated land by the aid of manure which is not usually applied to barani soils as it is apt to be too heating. Such soils must therefore be allowed to recuperate by lying fallow (*sanwin* in the Sub-division, *badhwar* elsewhere) for a period equal to that during which they were under crop. As water in Ambala is usually unobtainable the cultivator manures unirrigated land for cane, cotton, maize and wheat. The manure is applied when the rains begin so the heat escapes quickly and cotton and maize can be sown without undue delay. There can be no double-cropping without manuring.

There are different systems in the east and the west of the District for farming unmanured *barani* land. In the Rupar Sub-division a Rabi crop is immediately followed by a Kharif crop, the usual rotation being wheat-gram and fodder, and the land is then rested for a year. In Jagadhri it is more usual to crop in the Rabi and give a fallow in the Kharif or *vice versa*. The farmers in the three south-easterly Tahsils are more happy-go-lucky than their brethren in the Sub-division and the comparatively heavy rainfall in Naraingarh and Jagadhri tempts the zamindar to take as much out of the soil as he possibly can; the land usually gets a respite only when nature calls a halt. This heavy cropping is not necessarily characteristic of the best soil or the best farming. Far-sighted and scientific views are alien to this system of cultivation and there is a lack of that uniformity and order so noticeable in the Sub-division.

Sowings are very steady in amount from year to year and 117 acres of crops are sown annually per hundred acres of cultivated land. Failures are rather heavy because of the lack of irrigation.

The kinds of crops are well-suited to the agricultural conditions and staples are carefully selected to suit the various soils. There is very little variation in the kinds of spring crops but the staple commodity on the west is mixed wheat and gram while on the east these crops are grown separately. As regards autumn crops cane and cotton are much more prominent in the Sub-division than elsewhere. Natural grazing areas are now so contracted that fodder (great millet) is now the most important Kharif crop. Maize comes next. The hard clays in Ambala, Jagadhri and the Kharar Dakar will only grow rice and are entirely dependent on the rainfall. Unirrigated rice is a decidedly precarious proposition and the average failure rate in the Ambala Tahsil for the twelve years 1906 to 1917 was 48 per cent. On the other hand the Kharar Neli with its copious irrigation raises heavy and profitable crops of the best kinds of rice. Light well-drained soils suit gram and *bajra* which are largely grown under the Hills. The autumn pulses are very prominent in the central Jagadhri tract, probably because they are easily grown.

Since the 1887 Settlement poppy has been prohibited and this must mean a considerable monetary loss to the Sainis, Malis and Arains. However, it is fair to infer from the great reduction in the production of tobacco that the ordinary *barani* crops are now profitable enough to oust all but the most necessary of the irrigated staples. Potatoes find a lucrative sale in Ambala Cantonment and the Hill Stations but are only raised by a few industrious communities. The percentages of the main income-producing crops—maize, rice, cane, cotton, gram, wheat, wheat-gram—on total matured areas are as follows :—Rupar, 70 ; Kharar, 68 ; Ambala, 68½ ; Naraingarh, 67 ; Jagadhri, 67.

9. There is a little canal irrigation in Jagadhri. The Kharar Neli circle is heavily irrigated by ducts from the Ghagggar River. There is well irrigation in the Dhajia circle of the Rupar Tahsil and in the tiny Kharar Charsa. Apart from these localities and isolated ill-defined tracts elsewhere, the underground water supply is quite deficient and unreliable and these unfavourable conditions are accentuated in the Ambala Tahsil. The water available at normal depths is quite insufficient for irrigation purposes, the wells cannot give more than an intermittent supply and even drinking water fails altogether in some of the villages during the hot months. Ordinary boring is useless and conditions are against strainer tubes. There must be water under the District but it lies very deep and in the opinion of the Agricultural Engineer an artesian boring should not be started without material sufficient to go down three thousand feet. According to the agreement between the British Government and the Phulkian States dated 18th February 1873 (see the Sirhind Canal Completion Report) the Patiala State "will allow the British Government, if it desires to do so, to take a small watercourse from the Ghagggar to supply the Cantonment and town of Ambala, the watercourse to carry about twenty cubic feet per second." But this is a trifling palliative. Levels and hill torrents make it almost impossible to bring canal water into the Ambala Tahsil. To sum up, conditions in the Ambala District are unfavourable for irrigation from either canals or wells. The possibility of a storage reservoir in the Hills has not been overlooked but a suitable site is not yet forthcoming. There are two small lakes in the Morni Hill Tract but their irrigation value is small because the combined catchment area does not exceed two and-a-half square miles. I strongly advocate artesian borings.

10. The main line of the North-Western Railway from Lahore to Saharanpur traverses the Ambala Tahsil and the southern portion of Jagadhri. It is crossed at Ambala Cantonment Junction by the East Indian Railway main line from Delhi to Kalka ; the latter serves Ambala and adjacent parts of Kharar and Naraingarh Tahsils. No part of the Rupar Sub-division is on a railway and Rupar itself is thirty-one miles distant from the nearest Railway Station (Sirhind, North-Western Railway). However the Sirhind Canal is a traffic and passenger canal from Rupar to Doraha station (North-Western Railway).

As regards metalled roads the Rupar Sub-division is traversed by a road from near Chandigarh on the Ambala-Kalka Road to Rupar town. This has to cross several torrents and traffic is much interrupted in the rains. There is a cross road from Kurali to Sirhind station. The Ambala-Kalka Road

joins the Grand Trunk Road near Ambala City and the latter turning abruptly south towards Karnal and Delhi does not help Ambala Tahsil very much. In the remainder of the three eastern Tahsils there is a road from Barara station (North-Western Railway) to Nahan *via* Sadhaura and two or three short stretches of road radiating from Jagadhri but there is no inter-communication between these because the connecting link, the main road from Ambala to Saharanpur *via* Jagadhri, is still unmetalled. The last named is really a trunk route between the Punjab and the United Provinces and its metalling is a matter of provincial importance. I may say that the road from Jagadhri to Saharanpur has already been metalled and carried over the River Jamna on the old railway bridge.

On the whole the metalled road communications of Ambala District are not good. It would be difficult to find another district in the Punjab where the direct routes from headquarters to every one of the Tahsils still remain unmetalled, and it was only in the year 1919 that such crying needs as the provision of road bridges for the Grand Trunk Road over the Tangri torrent and for the Ambala-Kalka Road over the Ghaggar River were recognised by the commencement of construction work.

Unmetalled roads are adequate except in the Morni Hill Tract.

11. The Ambala District is essentially rural, Ambala City itself being a country town of 26,000 inhabitants (1911 census). Other small towns in order of population are :—Jagadhri, 12,000 ; Sadhaura (Naraingarh Tahsil), 7,750 ; Rupar, 7,000, Kalka (Kharar Tahsil), 4,500. Each of these places is a market town. As a general rule the farmer outside the hill tracts has no difficulty in carting out his produce either to a market town or to the nearest railway station and in getting full value for it.

12. The market for such miscellaneous agricultural products as milk, ghi, grass and firewood is small outside the neighbourhood of Ambala Cantonment and of Kalka (for the Simla Hill Stations). Many estates own coppices of *kikar* which they either sell at intervals or themselves turn into charcoal; *kikar* bark is now a profitable commodity. The Kharar Tahsil derives some profit from poultry breeding for the Simla market.

Mineral and grazing fees amount to very little though it is interesting to note that gold washing is done in some of the torrents. The District is not self-supporting in the matter of cattle and most of the plough bullocks are imported from Hissar. All the above sources of income combined cannot amount to more than a very moderate sum.

Outside income apart from the land is fairly considerable in the Sub-division where the sturdy peasantry have enlisted freely in the Army and the Police. Emigration to foreign climes is rare. The people in the remainder of the District are not enterprising and there was no recruitment amongst them previous to the War. The Sub-division was the only part of the District which responded when canal colony lands were distributed twenty years ago. The estimated number of squares held by zamindars in each Tahsil is :—Rupar, 1,086 ; Kharar, 548 ; Ambala, 127 ; Naraingarh, 20 ; Jagadhri 7. This reflects the comparative efficiency and prosperity.

CHAPTER II.—POLITICAL AND FISCAL HISTORY.

13. "Between the two divine rivers Saraswati (Sarusti) and Drishadwati (Chautang) lies the tract of land which the sages have named Brahmapur because it was frequented by gods" (Manu). The great divide of Northern India, see paragraph 2, which passes through the Jagadhri Tahsil between the Som and the Chautang Nadis is important from the ethnographical as well as the geographical point of view—see, *e.g.*, The Aryan Invasion of Northern India, Journal of the Royal Asiatic Society, October 1919. The source of the holy Sarusti lies in this region which must have been the seat of one of the earliest settlements of the Aryan invaders. The exiled Pandavas wandered through the jungles around Pinjaur and Kalka. Sugh on the old high bank of the Jamna near Buriya is probably the site of the capital of the ancient kingdom of Srughna which is described in Cunningham's Ancient Geography of India. In early mediæval times there was a Rajput settlement at Bardar in the Rupa Simlila. Firoz Shah Tughlaq, Sultan of Delhi, supplied water to his ne

city of Hissar Firoza by a canal from the Jamna which with modifications is now the Western Jamna Canal. An old Mughal watercourse from the Sutlej to Sirhind called the Mirza Kandi Canal can still be traced in the Rupar Tahsil. In the time of Akbar the Ambala District was part of the *sarkar* of Sirhind. Amongst the 33 *mahals* of this *sarkar* were Ambala, Khizrabad, Rupar, Sadhaura and Mustafabad. According to the Ain-i-Akbari there were brick forts at Khizrabad, Rupar and Sadhaura.

What is now the Rupar Tahsil had close associations with the rising Sikh power and it was at Chamkaur that Guru Gobind Singh experienced a severe defeat at the hands of the Mughal forces. However in 1763 A. D. a Sikh confederacy totally defeated the Mughal Governor of Sirhind and sacked the city. A general scramble for dominion followed and the conquered territories as far as the Jamna were divided amongst the victors. The history of the next forty years is made up of the endless petty warfare of these Sikh chiefs among themselves. Each separate leader and each group of feudatories strong enough to stand alone built a strong fort as a centre from which the neighbourhood could be overawed and harried. No attention was paid to the country by the British Government which at that time had fixed the River Jamna as the limit for political enterprise and was probably much in the dark as to the actual circumstances and political strength of the turbulent crowd across the border. A new situation was created by the rise of Ranjit Singh who threatened to cross the Sutlej and absorb the whole country as far as the Jamna, and the Sikh chieftains hastened to place themselves under the protection of the British Government. It was apparently assumed that the whole territory to the Sutlej was held by a few leading chiefs through whom the country could be efficiently administered and the efforts of the British authorities were aimed at the two-fold object of securing an alliance with Ranjit Singh and of extending protection to these lesser States ranging from the Jamna to the Sutlej. A definite treaty was concluded with Maharajah Ranjit Singh on the 25th April 1809. The treaty was followed in May 1809 by the celebrated proclamation of Colonel Ochterlony which took the cis-Sutlej chiefs under British protection exercised through the Ambala Political Agency. The chiefs were secured in their possessions and were granted a large measure of internal criminal and fiscal jurisdiction: in return the British Government asserted its right to feudal service and to lapses on the failure of heirs. It was soon found that the authorities so vested with semi-independent power included a host of minor fraternities and adventurers who had been at first subordinate to the original confederacies. Internal disorder compelled increased control till matters were brought to a head by the Sikh Wars. Meanwhile owing to lapses by escheat on the death without lineal heirs of the possessors of 1809 and their descendants the British District of Ambala gradually came into being, each successive lapse being made the occasion for a summary settlement of the village revenues and the introduction of direct British rule. At the same time the British Government scrupulously observed the engagement of 1809 and with the exception of the prohibition of internal war by the supplementary proclamation of 1811 the powers and privileges of the chiefs remained untouched.

In 1846-47 a fresh step had to be taken owing to passive obstruction or open hostility on the occasion of the first Sikh War. The chieftains had already lost the confidence of Government owing to their persistent mal-administration and incurable turbulence. After the Sutlej campaign of 1845 the British Government was forced to confiscate several large estates and to assume direct control even where the chieftains were allowed to retain the revenues of their villages. The feudal service required by the proclamation of 1809 was commuted for a fixed annual money contribution which is now usually calculated at two annas per rupee of land revenue, though in some cases the commutation tax is as high as eight annas. The second Sikh War ended in the annexation of the Punjab and in the removal of the political reasons which had hitherto complicated the question of the amount of power to be left to the cis-Sutlej chiefs. In 1849 it was accordingly declared that with certain exceptions, of which only Patiala and Kalsia have an intimate connection with the present Ambala District, all the chiefs should cease to exercise sovereign power and should lose all criminal, civil and fiscal jurisdiction; in short they became jagirdars in perpetuity subject only to lapse on the

failure of heirs, and their revenues were to be assessed by British officers under the British Code.

The final step necessitated by the march of events was taken in 1852 when the regular revenue settlement begun for British villages in 1847 was extended to the villages of the jagirdars. There have been few important lapses since 1852 and the present circumstances are as follows :—

Tahsil.	<i>Khalsa</i> villages.	<i>Jagir</i> villages	Shared villages.	Total.
Rupar	212	153	21	386
Kharar	198	109	89	396
Ambala	162	63	81	306
Naraingarh (including the 14 Morni <i>Bhojes</i>).	129	118	79	326
Jagadhri	164	137	86	387
Total	865	580	356	1,801

The zamindars are generally on bad terms with the jagirdars whom they still regard as interlopers: the latter are usually content to sit idle in their strongholds and do little or nothing to earn the respect of other communities. The pitch of assessment is often distinctly higher in *jagir* than in *khalsa* villages, a legacy from the past for which there appears to be no justification in the present.

14. According to the Ain-i-Akbari the combined cultivated area of Ambala, Khizrabad, Rupar, Sadhaura and Mustafabad *mahals* was 859,162 *bighas* with a total revenue of 3,30,58,316 *dams*. If we accept these figures as they stand, with the Akbari *bigha* at 538 of an acre and forty *dams* to the rupee the incidence per cultivated acre was Re. 1-8-0. One-third of the gross produce was exacted as the royal dues and for the convenience of the cultivators and the soldiery the value was taken in ready money.

It was usual for the Sikhs to collect their revenue in kind and two-fifths of the gross produce was the ordinary proportion taken in the cis-Sutlej States. The cesses were numerous and oppressive. How these dues were realised is described in an interesting manner at pages 19 to 21 of the Assessment Report of Rajpura and Banur Tahsils, Patiala State, 1905.

15. Estates as they lapsed to the British Government were summarily assessed in cash by officers of the Ambala Political Agency. These assessments were usually far too high as attempts were made to take in money the full equivalent of the Sikh collections in kind. Mr. Philip Melvill held that the summary settlements were on the whole very unsuccessful and that considerable hardship was caused. As an extreme instance I may take the case of the Sulhar tract of the Ambala Tahsil which lapsed in 1843. The summary assessment was so severe that by 1853 the *parganah* was almost entirely deserted.

16. In 1852 came the Regular Settlement and a uniform cash assessment was imposed throughout both *khalsa* and *jagir* villages. The work was shared between Mr. Philip Melvill and Mr. Wynyard as follows :—

Tahsil.	Mr. Melvill.	Mr. Wynyard.
Rupar	All.	
Kharar	All.	
Ambala	All <i>jagir</i> villages	All the <i>khalsa</i> except Sulhar <i>parganah</i> which was settled by Mr. Bowring, Deputy Commissioner.
Naraingarh	One-third <i>khalsa</i> and all the <i>jagir</i> villages including Morni.	Two-thirds <i>khalsa</i> .
Jagadhri	104 <i>jagir</i> villages	All except 104 <i>jagir</i> villages.

Mr. Wynyard's assessments were too high at first but he became more lenient as the work progressed and Jagadhri was fortunate enough to be his last Tahsil. His earlier assessment in Naraingarh broke down very quickly and in 1854 Mr. Melvill made a complete revision of the revenue in these tracts resulting in a substantial reduction of nineteen per cent. Mr. Wynyard's best work seems to have been done in the Ambala Tahsil and his assessment rates were held to be moderate though higher than in Jagadhri. Mr. Melvill's assessments as first announced in Rupar were rather high and in many cases reductions were given almost immediately especially in the Bet circle. The Commissioner writing in 1855 considered the assessment to be perhaps somewhat high compared with Kharar but thought that the revenue would be willingly paid in ordinary seasons. Mr. Melvill gave reductions on the summary demand estimated at from 16 to 19 per cent. in Kharar and 9 per cent. in Rupar. The Commissioner in 1855 held that the Kharar assessment was very moderate.

The assessments of the Regular Settlement were put to a severe test by the extraordinary fall in the prices of agricultural produce which occurred between 1853 and 1860. A revision in the Jagadhri riverain area gave reductions of 19 per cent. in the Northern Jamna Khadar circle (1855) and of 11 per cent. in the Southern Jamna Khadar (1859), while an 18 per cent. alleviation was granted in twenty villages of Adhoa *pargana*, Ambala Tahsil (1859). The Rupar Sub-division is more efficient than the rest of Ambala and carried over the crisis. From 1860 onwards prices rose rapidly and the Settlement worked well enough throughout the District.

Tahsil.	Approximate revenue of Summary Settlement excluding muafis.		Revenue of Regular Settlement of 1852.
	Rs.		Rs.
Rupar	2,25,586		2,15,008
Kharar	2,35,049		2,22,479
Ambala	2,55,156		2,09,146
Naraingarh excluding Morni.			1,73,309
Jagadhri			2,14,639

17. The first revision of the Regular Settlement began in the year 1882. Mr. (latterly Sir Alfred) Kensington was the Settlement Officer of four out of the five Tahsils composing the present District and wrote the Assessment Reports. This work was done for the fifth Tahsil (Jagadhri) by Mr. (now Sir James) Douie.

Mr. Kensington in the Rupar Sub-division found that there had been a great increase in prices estimated at 65 per cent. since the Regular Settlement but only a small increase in cultivation. A large proportion of the revenue was assigned, population was dense and holdings small. Debt was moderate, alienations were inconsiderable and there were no special economic drawbacks to be considered. The pitch of the theoretical Government demand had been reduced from two-thirds to one-half of net assets but cesses had increased. Cash rents were paid on only 6 per cent. of the cultivation in Rupar and 4 in Kharar so the chief guide to assessment was the produce estimate. The tract was very dependent on rainfall but this was sufficiently constant in both distribution and amount and cultivation was secure. Holdings were in the hands of good cultivating classes and the owners themselves farmed 83 per cent. of total cultivation in Rupar and 78 in Kharar. The old assessment was full enough everywhere except in the small Charsa circle. There was little ground for increased revenue except the small amount of new cultivation and the rise in prices. In framing his produce estimate Mr. Kensington assumed very moderate yields and his commutation prices were based on the average rates prevailing during the twenty-five-year period 1860-84 with which they closely agreed.

The three remaining Tahsils were not so prosperous. There was less pressure of population on the soil and holdings were ample but the proprietary body from an agricultural point of view was moderate in Ambala and distinctly weak in Naraingarh and Jagadhri. Alienations had been considerable and the zamindars were much in debt, especially in Jagadhri. The money-lenders of Jagadhri were shrewder and more avid of land than those in other parts of the District while the moderate character of the assessment and the large size of the holdings had contributed to the credit and the recklessness whereby the people had fallen a prey to the Baniya. Mr. Douie computed that the Jagadhri land-owners between 1850 and 1887 had lost one-third of their land, three-fourths of the sales and four-fifths of the mortgages being to money-lenders. The rate of expropriation was accelerating as more than half these transfers had taken place in the ten years preceding Settlement. A moderate enhancement was claimable on the score of the improvement in the value of raw produce and of a small increase in cultivation.

The following enhancements were taken at the first Revised Settlement (1887):—

Tahsil.	Year preceding first Revised Settlement.	First Revised Settlement (Lal kitab figures).	Percentage of increase.	Incidence per cultivated acre.	Incidence per matured acre (selected years.)	Percentage, <i>khalasa</i> .	Percentage, <i>jagir</i> .
	Rs.	Rs.		Rs. A. P.	Rs. A. P.		
Rupar ...	1,93,514	2,25,105	16	1 14 11	1 10 5	63	37
Kharar ...	2,21,950	2,54,388	14½	1 11 1	1 11 4	51	49
Ambala ...	2,14,071	2,33,895	9½	1 5 11	1 5 8	60	40
Naraingarh ...	1,56,040	1,83,456	17½	1 6 6	1 4 5	56	44
Jagadhri ...	2,06,720	2,39,244	15½	1 7 0	1 7 0	51	49
Morni ...	5,370	8,019	49	1 2 9	...	...	100

The *jagir* percentages are calculated on the gross assigned revenue including commutation.

CHAPTER III.—REVISION OF THE RECORD OF RIGHTS.

18. The operations began in the two Tahsils of the Rupar Sub-division and were carried out on orthodox lines. The formal date of opening was the 1st of October 1915, but Malik Muhammad Hayat Khan Nun, Extra Assistant Settlement Officer, Munshi Dhiyan Singh, Settlement Tahsildar of Rupar, two Naib-Tahsildars and 29 Field Kanungos had already joined and occupied themselves with such preliminary work as the special *girdawari* together with *jamabandi* and mutation attestation. I took over charge as Settlement Officer on the 28th of October 1915.

I may say at the outset that Mr. Kensington's records and maps were very accurate and reliable and his settlement is justly regarded as a classic. It synchronised with and benefited from the reforms introduced by Major (afterwards Lieutenant-Colonel) Wace, Settlement Commissioner, the maps were made on the square system and the records were also prepared on thoroughly up-to-date methods. Mr. Kensington was most painstaking and lucid in all his work. Under these fortunate circumstances the present settlement operations have proceeded from start to finish with smoothness and despatch and the maps and records have given satisfactory inspection results throughout. There were three inspections by the Director of Land Records in person in March 1916; November 1916, and February 1918.

19. The unit of measurement is the *karm* of 57·157 inches and that of area is the *kachcha bigha* equivalent to 5/24 acre. The mapping on a scale of forty *karms* to the inch was done on the regulation *musavi* sheets. The first business was to

Maps.

test the existing village maps and to determine where remeasurement was required and where map correction would suffice. As a preliminary all the Naib-Tahsildars and Kanungoes were called together to a convenient place and the Tahsildar thoroughly explained to them what he proposed to do (*talimi patri*). It appeared from the special *girdawari* that remeasurement was only called for in the riverain tracts; map correction would be sufficient elsewhere. This decision applied to the whole of the District and the confidence so placed in the old maps has been amply justified. The new maps in the Sutlej Bet and Jamna Khadar were based on traverses laid down by a Riverain Survey Party under the capable direction of Rai Sahib Lala Maya Das Puri. The survey work began in the Rupar Bet (71 villages) in October 1915, and the first plotted mapping sheets were received here early in January 1916. This procedure was repeated in the Jagadhri Khadar (34 villages) a year later.

In the Morni Hill Tract only cultivated areas were measured at the 1887 Settlement and nothing beyond this has been done now.

For the purposes of map correction traces of the 1887 maps were made at Sadr direct from the old *part sarkar* onto the new mapping sheets by means of carbon paper. A difficulty arose from the fact that the old maps were on hinged sheets; another obstacle consisted in the fact that the squares ruled on the new *musavi* sheets as supplied to me were sometimes not as accurate as they might have been. The side of the square measures five inches (equivalent to 200 *karms*) in all cases except the Rupar riverain estates bordering on Hoshiarpur where it is $5\frac{3}{4}$ inches. The reason is that 230 Ambala *karms* are equal to 228 Hoshiarpur units.

In a few Saini villages of the Rupar Sub division fragmentation of holdings had proceeded so far that they were measured on double the usual scale.

Both measurement and record work were done by the permanent patwari staff helped by the district patwari candidates who thus obtained an excellent training. I sanctioned the engagement of a certain number of peripatetic settlement patwaris but forty was the maximum number employed at one time. These professionals from outside are apt to lose all interest once the actual mapping is completed and their record work is not so good.

20. The rule of fixed boundaries prevails along both the River Sutlej and the River Jamna. At the recent Hoshiarpur Settlement a permanent boundary was determined for four of the Rupar riverain villages and doubtful boundary lines of sixteen others were adjusted. I completed the work along the Sutlej by determining the permanent boundary between the Rupar village of Awankot and the Hoshiarpur estate of Batarla with powers under section 101-A of the Land Revenue Act. The only troublesome case on the Jamna was that concerning Majri Tapu and the Saharanpur village of Daryapur Pipli. Both the aforesaid boundary disputes ante-dated the 1887 Settlement.

In view of the great length of boundaries common to Ambala and no less than seven adjoining States, demarcation work has been very light. The only cases which have given trouble are an encroachment of Bhagat zamindars at Sanawar and a protracted controversy with the Sirmur State about the line between Nimwala and Rigarwala.

21. As far as possible we adhered to the golden rule of *sath ke sath*, that is to say measurement and record work proceeded together and the patwari was not supposed to leave one village and begin another till all the work in the former save the assessment was complete. Mapping was pressed on and record work completed later only in riverain villages where it was essential to finish measurements before the marks laid down by the Survey Department were obliterated by floods. Preliminary entries in the *khatauni* slips were ready before the patwari started mapping work and with each day's measurements he entered up the field book, *fard rangsazi*, *khatauni* slips and *naqsha chuhat*. When the map was completed the patwari could compile the *jama'andi* with its attendant statements from the *khataunis*. There were four Naib-Tahsildars in the Rupar and four in the Kharar Tahsil each of whom supervised four or five

field kanungos. Each kanungo in his turn was responsible for four or five patwaris and had to inspect each *patri* four times in the month. This meant that a Naib-Tahsildar saw the work of each patwari once a month.

As soon as survey was complete the patwari began *takmil* and on its completion the girdawar did his final check. Within fifteen days of this the Naib-Tahsildar was expected to do his final attestation. As soon as this was finished the Tahsildar was informed and the patwari set to work writing up both copies of the *jamabandi*. The Tahsildar's final attestation took place as soon as he could conveniently arrive.

There was a special establishment at each tahsil to colour the maps as they came in. As a rule the patwaris prepared the copies of their own maps. The compilation of assessment statistics by circles and tahsils was done by a special establishment under the supervision of the Sadr Kanungo and the Settlement Officer's Reader. I aimed at beginning village inspections for the purposes of assessment in each Tahsil one year after the commencement of the measurement and record work. The assessment statistics were ready in ample time for all the village inspections and the assessment reports to be based on the completed new figures.

Measurement and record work commenced in the remaining three Tahsils of the District with effect from the 1st of October, 1916. Mr. H. M. Cowan, I.C.S. (afterwards Mr. J. G. Beazley, I.C.S.), was Assistant Settlement Officer for Naraingarh and Jagadhri, and Malik Muhammad Hayat Khan, Extra Assistant Settlement Officer, supervised the Ambala Tahsil while I did village inspections in the Rupar Sub-Division. The work proceeded with punctuality and despatch and with the same satisfactory inspection results as in the Sub-division. In fact, if it had not been for Mr. Cowan's unfortunate illness the Naraingarh and Jagadhri Tahsils would have been inspected in the cold weather of 1917-18 and the Settlement would have been virtually completed one year before its time. However Jagadhri Tahsil had to remain over till the next year.

22. There was some confusion in the old *naqsha chahat* owing to a faulty discrimination between the owner of the land containing a well and the owner of the well shaft. This has been amended by ordinary mutation procedure.

Special features.

Pedigree tables were not prepared in 1887 for occupancy tenants and this practice has been maintained. The 1887 genealogical trees only go back three generations.

In the riverain tracts the *wajib-ul-arz* lays down that an owner is entitled to recover diluviated land when it once more emerges from the river. A submerged field remains on the record with its details of ownership and area complete but is described as *ghair mumkin darya*. This was the procedure from 1852 to 1887, but in the 1887 Settlement diluviated land was recorded sometimes as *shamilat* and sometimes it was entered as owned by *mutafarriq malikan*, neither names nor shares being given. Both these methods appear to have been opposed to the existing custom and they merely postponed the inevitable day of settlement. The general question has had to be taken up now and has given an enormous amount of trouble as shares etc. have often to be worked out according to the maps and records of 1852 and the work has become much more difficult because it was shirked in 1887. As a rule all we can do is to demarcate the lands as any attempt to interfere with present possession would lead to numerous suits. We cannot restore things to the condition of 1852 throughout entire villages without the corporate consent of the owners.

The standing records.

23. The contents of the standing records-of-rights are as follows :--

- (1) Preliminary proceeding containing the notifications which authorised the settlement operations ;
- (2) Alphabetical Index of owners and tenants ;
- (3) Index of field numbers ;
- (4) *Jamabandi* ;
- (5) Statement of assignments ;
- (6) Statement of rights in wells.
- (7) Village administration paper (*Wajib-ul-arz*) ;

- (8) Statement of village cesses ;
- (9) Order of the Settlement Collector determining the assessment ;
- (10) Order of the Settlement Collector distributing the assessment over holdings ;
- (11) Genealogical tree ;
- (12) Field map.

The first ten are bound together in one or more volumes of convenient size. Where the pedigree table does not exceed four sheets it is placed in a pocket of the bound volume. If of larger size it is kept in a separate envelope. The field maps are stored in steel cases in the Tahsil and Sadr offices. The shares on which the village is held are carefully recorded both in the *jamabandi* and in the *shajra nasb*. These shares, often called ploughs, are well remembered and are used to determine rights in the *shamilat*, to regulate succession to derelict property and in collecting the *malba*.

24. The *wajib-ul-arz* was attested by the Extra Assistant Settlement Officer in three Tahsils and by the Assistant Settlement Officer and the Extra Assistant Settlement Officer in the other two Tahsils. The contents of this document have been somewhat reduced by the exclusion of matters now decided by law or rule and disputes have been few in number. During the course of the Settlement it was noted that the instructions of paragraph 296-A of the 1915 edition of the Settlement Manual did not entirely agree with those contained in Appendix VIII-E. The result of representations was the issue of Correction Slip No. 21-S. M. of the 12th of April 1918 with an amended paragraph 296-A.

25. New English abstract village note-books have been prepared and bound in volumes of convenient size ; a circle was usually too large to be contained in a single volume. The contents for each village are—

- (1) a one-sixth scale copy of the village map showing all salient features and soils in different colours ;
- (2) a comparative statistical statement of areas, cultivation, crops, rents, transfers, resources on a form sanctioned by the Financial Commissioner ;
- (3) a revised form as sanctioned by the Financial Commissioner for recording the chief statistics for the next thirty years ;
- (4) a typed copy of the assessment inspection note recorded by the Settlement Officer at last Settlement ;
- (5) the original inspection note of the present Settlement including the new assessment order and the result of objection, if any ;
- (6) two blank sheets for future notes by the Collector and his assistants.

Numbers (1), (2) and (4) of the above were prepared before village inspections commenced. My inspection note was invariably recorded in the people's presence before leaving the village. This method saved me from falling into arrears and also gave an assurance to the people that their representations would not be forgotten.

New bilingual village note-books have been prepared for all Tahsils with effect from the introduction of the new assessments. Circle and Tahsil note-books have also been prepared on the same form.

26. The revision of the record-of-rights involved the attestation of a great number of mutations ; the following table shows the number of mutations attested during the time Settlement operations lasted in each Tahsil. The rule that a transfer should invariably be recorded as being with or without *shamilat* share only dates back to the year 1905 and a large number of mutations in the way of *sikkat indiraj* have been entered up to define more closely this important

matter to which considerable attention has been paid in the way of supplementing and completing rather than of altering the existing records:—

Period.	Rupar.	Kharar.	Ambala.	Naraingarh.	Jagadhri.
1st October 1915 to 31st March 1918.	20,500	20,796	...	...	...
1st October 1916 to 31st March 1919.	...	...	28,106	21,694	20,680

27. *Mujmalli* maps on the scale of one mile to the inch have been prepared for all five Tahsils and made over to the Deputy Commissioner who will arrange for their reproduction.

Handkerchief maps have also been prepared on the model of the excellent Rohtak production. The District is awkward in shape and there will be two separate handkerchief maps, one of the Sub-division and the other of the remaining three Tahsils.

28. The Financial Commissioner toured through the Rupar Sub-division in October 1916, and through the other three Tahsils in November 1917. In the cold weather of 1916-17 I was fully occupied with the onerous task of inspecting the 782 villages of the Rupar and Kharar Tahsils. Measurement and record work had progressed so well that I was able to use the new figures straightaway and the great bulk of my inspection work was finished by the 15th March 1917. Both Tahsil Reports went to Press in July and Government orders were received in time for me to announce the new revenue throughout both Tahsils in December; collections were made with effect from Kharif, 1917.

Ambala and Naraingarh Tahsils were inspected in the winter of 1917-18, Naraingarh by Mr. J. G. Beazley and Ambala by myself. Both reports were in the hands of the Press by July 1918, and Government orders were received in November. The new assessments were announced at the end of the year but owing to the disastrous failure of the 1918 monsoon the realisation of the increase was postponed till Kharif, 1919.

Mr. J. G. Beazley, Assistant Settlement Officer, inspected the higher *bhojes* of the Morni Hill Tract in April and May 1918, and being transferred in June had to return for a month in November in order to announce the new Naraingarh assessment and to complete the Morni inspection. I inspected Jagadhri in the cold weather of 1918-19. The preparation of the Jagadhri Report was somewhat delayed by the fact that I was Deputy Commissioner of Ambala in addition to my own duties from the 12th April to the 19th June 1919 under exceptional circumstances, but both it and the Morni Report went to Press by July and as in preceding years orders arrived in November and the new assessments were announced at the end of the year with effect from Kharif, 1919. Settlement operations ceased punctually in each Tahsil and the new assessments were punctually announced throughout.

CHAPTER IV.—THE REVISION OF THE ASSESSMENT.

29. The expiring assessment when first introduced (1888-89) amounted to Rs. 11,40,515 (Rs. 6,36,767 *khalsa*, Rs. 5,04,748 assigned). It replaced an assessment (1852) whose chances of success had been jeopardised by the severe summary settlements and by falling prices, and reductions had to be granted in places soon after the announcement. After 1860 prices of raw produce rose continuously and the assessment worked with fair success. Revision was held to be justified by a great rise in prices, by a moderate increase in resources and by the superior wealth and comfort of the people.

The new assessment was based on produce estimates. Cash rents were used only to check the revenue rates deduced from produce calculations. The yields assumed were probably quite inadequate and the prices were very moderate. Where necessary sufficient deductions were allowed on account

of payments made to menials : no account was taken of the share of the straw realised by the proprietors. The following statement shows briefly the development of resources between the Regular (1852) and the first revised (1887) Settlements, the increase in, and the pitch of the demand :—

Tahsil.	INCREASE OR DECREASE PER CENT, IN		Rise per cent in prices.	Percentage of proposed demand on estimated half net assets.	Increase per cent. in demand as sanctioned.	INCIDENCE PER ACRE.	
	Cultivated area.	Irrigated area.				Cultivated.	Matured.
						Re. A. P.	Re. A. P.
Rupar ... ..	...	+40	65	83	16	1 14 11	1 10 11
Kharar	+10	+15	66	86	14½	1 11 1	1 9 4
Ambala	+9	+9	59	86	9½	1 5 5	1 5 8
Naraingarh	+11	-28	66	88	17½	1 6 6	1 4 5
Jagadhri	+4	-20	66	96	15½	1 7 0	1 7 0

A high proportion of the estimated half net assets was taken. Of the four Tahsils settled by Mr. Kensington, the assessment was full throughout the Rupar Sub-division except the Kharar-Charsa circle with some leniency in the Kharar Tahsil as a whole compared with Rupar. The revenue in Ambala and Naraingarh was fairly full. Mr. Douie's assessment of Jagadhri was lenient on the whole. There was no particular inequality between Tahsils and the revenue was excellently distributed over estates.

30. The first forecast report was prepared at the end of the year 1904. There had been very little development in resources, a marked decrease in population and a rise in prices which the Deputy Commissioner estimated at only 13 per cent. He doubted whether a revenue enhancement of more than 10 to 15 per cent. could be looked for. The Settlement Commissioner was strongly of opinion that the three weaker Tahsils should not be re-assessed for the time being and that this work should be confined to Kharar and Rupar. The Government orders were to the effect that the Settlement operations were postponed for five years and that a revised forecast should be prepared during the cold weather of 1909-10.

The revised forecast did not reveal any marked improvement and the settlement of the Ambala District was again deferred for a period of five years until October 1915.

A second revised forecast was submitted in February 1915. The Deputy Commissioner reported that there had been no marked improvement in the general resources of the District whereas population had declined considerably. An enhancement in revenue could only be based on the great rise in prices and in cash rents. The rise in prices had been phenomenal. After consideration of both prices and cash rents the Deputy Commissioner held that an enhancement of 30 per cent. was a fair estimate for the whole District with a greater increase in the Sub-division than elsewhere. Government sanctioned a re-settlement of the Ambala District with effect from the 1st October 1915. The view was accepted that the enhancement will be within the 25 per cent. limit for the District as a whole and will not exceed 33 per cent. in any Tahsil.

31. The following statement shows the more obvious ways in which agricultural resources have increased or decreased per cent. since last Settlement :—

TAHSIL.	LAND.				AGRICULTURAL STOCK.				
	Cultivated.	Irrigated.	Sown.	Matured.	Cattle and young stock.	Buffaloes.	Sheep and goats.	Carts.	Ploughs.
Rupar ...	+ 2.66	+ 63.41	- 2	- 8	+ 14	- 1	+ 23	+ 59	- 11
Kharar ...	+ .95	+ 8.15	...	- 3	+ 9	+ 7	+ 26	+ 24	- 15
Ambala ...	- 4.11	+ 5.55	- 6	- 7	+ 18	- 7	+ 54	+ 6	- 16
Naraingarh ...	- .18	- 8.92	...	- 12	+ 17	- 14	+ 18	+ 44	- 10
Jagadhri ...	- 2.52	- 98.79	...	- 6	+ 18	- 20	+ 13	+ 51	- 5
District ...	- .95	+ 10.87	- 2	- 7	+ 16	- 8	+ 24	+ 31	- 11

At last Settlement there was very little culturable waste. Cultivation has practically stood still as far as areas are concerned. Generally speaking irrigation was always a negligible quantity in this District and still remains so. Canal irrigation is available to a small extent (total recorded *nahri* 2,662 acres) only in the north of Jagadhri Tahsil where there is already an annual rainfall of fifty inches and canal water is a superfluous luxury. The underground conditions are unfavourable for wells except in the Dhaia and Charsa tracts of the Sub-division and isolated localities elsewhere. Unfortunately well water is most scarce in the Ambala Tahsil where it is very badly needed. Apparently the conditions make it impossible to introduce irrigation into this Tahsil from existing canals.

There is a satisfactory increase in cattle, and a growth in the number of sheep and goats which is not so gratifying. The District does not breed cattle owing to the lack of pasture and plough bullocks have usually to be imported from Hissar at a price. The multiplication of carts is a good sign. Ploughs have decreased with the population but are still sufficient for the amount of land under cultivation.

On the whole sown areas are much as they were thirty years ago, but matured areas have diminished. The District figures are as follows :—

Detail.	Sown area (selected years).	Matured area (selected years.)
At Settlement ...	879,660 acres	780,252 acres.
Now ...	864,421 „	725,580 „
Decrease, per cent. ...	2	7

Throughout my four tahsils I noticed at village inspections that in almost every estate the proportions of matured to cultivated areas are less now than they were at Settlement, but I have no reason to believe that the efficiency of cultivation has declined and in any case it is quite impossible that this has happened in every village. The system of allowing for failed areas at the *girdawari* had only just been introduced at the time of last Settlement, so it is fair to conclude that actual matured areas have not diminished but *kharaba* is estimated now with greater accuracy and liberality.

32. I give below a comparative statement of the matured areas in acres of the main income-producing crops—maize, cane, rice, cotton, wheat, gram, wheat-gram. For the

Valuable crops.

purposes of comparison I assume that the produce of the mixed wheat and gram crop (*berra*) approximates to half of wheat and half of gram :—

Tahsil.		Maize.	Cane.	Rice.	Cotton.	Wheat.	Gram.	Percentage of these crops on total matured area.
Rupar	Settlement ...	19,635	4,610	3,611	0,701	44,656	13,202	70.65
	Now ...	16,618	4,970	1,561	9,333	34,996	20,576	69.99
Kharar	Settlement ...	20,317	1,768	8,820	17,825	52,635	13,442	71.35
	Now ...	17,907	2,668	5,866	14,997	36,657	28,448	68.04
Ambala	Settlement ...	17,029	1,632	11,921	7,958	59,994	16,071	66.84
	Now ...	17,763	786	11,245	8,995	51,403	18,873	68.46
Naraingarh	Settlement ...	16,050	1,848	12,343	8,421	45,081	10,967	63.74
	Now ...	11,975	1,310	10,039	9,543	32,384	18,927	65.74
Jagadhri	Settlement ...	16,296	4,886	19,506	7,561	46,315	10,178	61.37
	Now ...	13,603	4,491	17,781	7,560	46,753	15,582	67.04
District	Settlement ...	89,327	14,694	56,201	52,466	2,48,681	63,830	67.81
	Now ...	77,866	14,175	46,492	50,428	2,02,197	1,02,400	68.02

To present this table without comment would be quite misleading. I have no idea to what extent the previous cycle of selected years (merely the two or three years immediately preceding Settlement) was truly representative of the period from 1852 to 1887, and there is no means of finding out because the statistics are lacking. I have just shown that the general decrease in matured areas is more apparent than real. Similarly differences in classification make impossible an accurate comparison between the amounts of wheat and gram in 1887 and now. It is safe to infer that there has been a substantial rise in combined wheat and gram with an increased production of cane and cotton while maize and rice have declined with the population.

Throughout the District the Rabi is the important harvest as far as food-grains are concerned because so large a proportion of the Kharif consists of *jowar* grown for fodder. The autumn fodder crop in the Sub-division now accounts for almost one-third of the total matured Kharif area. No pastures worthy of the name are left as every square yard capable of profit has been brought under the plough. There can be no doubt that the stock of cattle is now beyond the safety limit and a run of two bad monsoons would mean serious losses. However the District has never experienced such a calamity. Only the Ambala and Jagadhri Tahsils show an extended production of valuable crops. There is slight retrogression elsewhere which is most marked in Kharar and is due there entirely to small reductions in the three Kharif crops—maize, rice and cotton. Maize is the chief food staple of the people and population has much decreased. Probably the selected years were not favourable for cotton.

33. The population of the District at different periods is compared in the following statement. I take the Census of 1891 as representing the population at last Settlement :—

Tahsil.	Detail.	1891.	1901.	1911.
Rupar	Population	146,816	139,012	108,556
	Population per square mile of cultivation ...	786	744	581
	Decrease per cent. as compared with 1891 ...	...	-5	-26
Kharar	Population	168,642	166,267	133,283
	Population per square mile of cultivation ...	711	701	562
	Decrease per cent. as compared with 1891 ...	..	-1	-21
Ambala	Population	179,551	167,568	141,162
	Population per square mile of cultivation ...	683	640	539
	Decrease per cent. as compared with 1891 ...	...	-7	-21
Naraingarh	Population	133,590	124,029	105,841
	Population per square mile of cultivation ...	657	610	521
	Decrease per cent. as compared with 1891 ...	..	-7	-21
Morni	Population	7,736	7,013	6,606
	Population per square mile of cultivation ...	1,000	907	854
	Decrease per cent. as compared with 1891 ...	...	-9	-15
Jagadhri	Population	175,140	161,208	140,296
	Population per square mile of cultivation ...	691	636	554
	Decrease per cent. as compared with 1891 ...	...	-8	-20

The reduction in population between 1891 and 1911 was very serious throughout the District and was almost wholly due to the ravages of plague. Between the enumerations of 1901 and 1911 the numbers of the various tribe decreased by the following percentages :—

Tahsil.	Jats.	Malis or Sainis.	Arains.	Jputs.	Gujars.	Chamars.
Rupar	25	17	43	25	15	19
Kharar	21	21	43	21	9	21
Ambala	24	15	12	11	7	10
Naraingarh	24	17	17	10	1	9
Jagadhri	17	17	9	11	2	8

Mortality has been greatest amongst the better cultivators.

The influenza epidemic from the middle of October to the end of November 1918 was probably while it lasted one of the most fatal scourges which have ever afflicted humanity. Not only was the mortality very great but an undue proportion of the victims were adults in the flower of their age. At that time I was inspecting villages in the Jagadhri Tahsil. I

made enquiries in 67 villages and checked the replies by reference to the headmen and the patwaris. The mortality as elicited in this way varied from 2 to 20 per cent., the median figure being 9. Out of 822 Jagadhri lambar-dars 83 died of influenza. The Civil Surgeon's conservative estimate for the mortality of the entire District is eight per cent. of the total population. The full economic effects of this terrible visitation have yet to be seen. It is safe to predict that the 1921 census will not reveal any increase of population in Ambala.

There is scarcely any emigration to the canal colonies and foreign climes or any enlistment except from the vigorous Rupar and Kharar Tahsils which alone responded when squares in the Punjab canal colonies were distributed twenty years ago—see paragraph 12.

The great mortality has reduced the pressure on the soil but generally speaking has not adversely affected the efficiency of agriculture. The large rainshackle Rajput villages in the three southern Tahsils are undermanned. In the Jagadhri Tahsil and the inferior tracts of Ambala and Naraingarh land is now more plentiful than tenants.

34. The amount of alienation that has taken place since Settlement is decidedly less than formerly and there is an all-round improvement as regards alienations to others (usually money-lenders). The present position is nowhere such as to cause anxiety and is summarised below in the form of percentages on the cultivated area :—

TAHSIL.	SALES		EXISTING MORTGAGES	
	To zamindars.	To others.	To zamindars.	To others.
Rupar	6	1	9	3
Kharar	5	2	8	4
Ambala	8	4	10	6
Naraingarh	7	4	7	10
Morni	4	3	4	4
Jagadhri	9	8	7	7
District	7	4	8	6

The position of the money-lender is far stronger outside the Sub-division. In Jagadhri sales were very heavy before 1887. Sir James Douie held that fully one-third of the cultivated land had been sold or mortgaged mostly to money-lenders and opined that the future of the Tahsil was a dark one unless some radical measure was taken to arrest the progress of decay. Fortunately that measure was taken and the Alienation of Land Act (Act XIII of 1900) has saved the tribes of Jagadhri and Naraingarh from expropriation which beyond doubt would by this time have been practically complete. The Financial Commissioner has noted that the Jagadhri Tahsil supplies the most signal instance of the beneficial results of that enactment in maintaining the status of agricultural tribesmen as proprietors of agricultural land.

35. The value of land has enhanced enormously in the last thirty years. The selling price has trebled or quadrupled in all Tahsils, similarly for mortgage consideration except in Naraingarh where it has about doubled. The multiple of the land revenue represented by the selling price of land ranged from 66 in Naraingarh to 162 in Rupar. The Land Alienation Act only operated to a small and

temporary extent in checking this rapid rise in values. The following table gives the sale price and mortgage value per acre cultivated as taken from the latest series of years dealt with in the Tahsil Assessment Reports :—

Tahsil.	Series of years.	VALUE PER ACRE CULTIVATED.			
		Sale.		Mortgage.	
		Price.	Multiple of revenue.	Consideration.	Multiple of revenue.
		Rs.		Rs.	
Rupar	1912-13 to 1915-16	305	162	272	148
Kharar	1912-13 to 1915-16	256	150	264	150
Ambala	1912-13 to 1916-17	182	130	141	100
Naraingarh...	1912-13 to 1916-17	102	66	63	48
Jagadhri	1912-13 to 1917-18	133	111	76	53

Naraingarh and Jagadhri again emerge as the weakest Tahsils.

36. There has been little or no development in innate resources, but the enormous rise in the value of land shows that the people can afford to pay three or four times what they did thirty years ago and reflects the great increase in the prices realised by the zamindar for the produce of his fields. The standard of comfort has risen considerably. Wheat has largely replaced maize as the food of the people. Clothes are much better and there are more of them. Brick built houses are common in the Sub-division which is full of people who finance their neighbours or engage in other speculations. The Agricultural Bank movement was ill-directed at first and is only just commencing to benefit the District.

37. Cash rents, if sufficiently numerous, would at once solve the problem of determining the landlord's true half-net assets, but in Ambala the areas held on true cash rents are not sufficiently extensive to afford more than a rough check on the produce estimate. Cash rents are paid on the following percentages of cultivated area :—Rupar, 10; Kharar, 9; Ambala, 11; Naraingarh, 10; Jagadhri, 8. They are inflated in the Sub-division by the keen competition between efficient cultivating proprietors all hungry for land. At the other end of the scale comes Jagadhri where there is more land than tenants and where the landlord usually farms through his tenants and Ohamar labourers.

The following table exhibits the normal cash rents at Settlement and now :—

Tahsil.	Rate per acre at Settlement.	Present rate.	Increase, per cent.
	Rs. A. P.	Rs. A. P.	
Rupar	6 12 8	11 8 7	70
Kharar	5 10 5	10 8 2	111
Ambala	4 9 11	9 14 8	115
Naraingarh	3 10 3	7 0 10	94
Jagadhri	4 11 5	6 12 8	54

42. Sugarcane and cotton were treated as *zabti* crops at last Settlement. It is now the custom to divide the produce and they have been included in the *batai* crops. *Zabti* rents. There is now a marked tendency to divide fodder, but I have treated it as a *zabti* commodity. I have assumed cash (*zabti*) rates for the following :—

Kharij.—(1) Fruits ; (2) vegetables ; (3) fodder.

Rabi.—(1) Fruits and vegetables ; (2) fodder ; (3) tobacco.

Zabti rents have increased greatly since Settlement except in Jagadhri where they are customary and stereotyped in character. For the purposes of the produce estimate I have assumed moderate rates.

43. The enquiry into the prices of the principal staples was made in the usual way. My proposals were based on a careful and thorough examination of (a) circle note-book prices ; (b) Gazette prices ; (c) prices prevailing at harvest time in the villages. For the purposes of the produce estimate the following rates were assumed in annas per maund :—

Crop.	Price assumed.	Present wholesale harvest market price (1919-20) at Ambala Sadr.	REMARKS.
KHARIF CROPS.			
Sugarcane (<i>gur</i>)	60	143	
Cotton	92	218	
Maize	37	68	
Mash and Mung	44	149	
Moth	34	107	
Dhan	30*	62	*28 annas per maund sanctioned for Jagadhri Tahsil.
Ziri	37†	78	†84 annas per maund sanctioned for Jagadhri Tahsil.
Til	72	240	
Bajra	29	80	
RABI CROPS.			
Wheat	38‡	82	‡35 annas per maund for Rupar only.
Gram	29	80	
Wheat and Gram	32	80	
Barley	24	..	
Massar	33	98	
Barley and massar	28	..	
Barley and gram	26	..	
Sarshaf	60	155	
Linseed	60	..	
Toria	50	116	
Taramira	50	..	

My prices report was submitted in November 1916, and the schedule was approved in January 1917, the middle period of the War. The time was one of great economic uncertainty. Present prices (1919-20) make the above schedule look quite ridiculous. It is safe to predict that prices will not drop to anywhere near the adopted level and that my produce estimate is a fraction of the reality.

Experience showed that the prices assumed for straw in the Sub-division and Ambala were so inadequate that I raised them in my last report (Jagadhri). I could do this without unfairness because straw does not bulk largely in the produce estimate.

44. I have discussed the important matter of yields at some length in my Tahsil Reports to which I invite a reference whenever detailed information is required. There can be no doubt that Mr. Kensington's yields were lenient to a fault. My opinion was fortified by constant enquiries during village inspections and by the results of our crop experiments. In Rupar I raised his figure for rice by about a maund per acre; maize remained much the same; cane and cotton were treated for the first time as *batai* crops and my yields compare favourably with those assumed by other Settlement Officers in neighbouring circles of similar character. I raised *barani* wheat by 40 to 60 *seers*, similarly for barley and for gram, and a smaller increase in the case of wheat-gram (*berra*). The Financial Commissioner held that on the whole the Kharif rates were very cautious while those for the Rabi were in no way excessive. Similarly for the other four Tahsils. The only case in which higher authorities have expressed any misgiving was the yield assumed for sugarcane in Naraingarh.

45. The matured areas of the produce estimate are the averages for the four years 1909-10, 1910-11, 1912-13 and 1913-14 (Rupar, Kharar, Ambala and Naraingarh) and for the four years 1910-11, 1912-13, 1913-14 and 1914-15 (Jagadhri). They differed as follows from the annual average for the full period since Settlement:—

Tahsil.				Kharif.	Rabi.	Percentage.
				Acres.	Acres.	
Rupar	...	...	...	—2,159	+1,064	—'86
Kharar	...	...	...	+1,164	+2,976	+2'72
Ambala	...	...	...	+459	—565	—'06
Naraingarh	...	...	...	+1,482	+3,025	+3'66
Jagadhri	...	...	...	—1,507	+2,218	+1'46

In Ambala the selected years are intimately representative as regards the proportion of Rabi to Kharif, and the correspondence in respect of true normal areas is even closer. An excess of '6 per cent. in the Kharif is balanced by a defect of '7 per cent. in the Rabi, the total variation being only '06 per cent., a remarkable result. The greatest divergences occur in Naraingarh and Kharar. These differences were adjusted when calculating the true half net assets.

46. In framing the produce estimate on the basis of the division of crops between the landlord and the tenant on the threshing floor, it is necessary to consider whether the landlord contributes to the customary dues in kind paid to the village artisans (carpenter and blacksmith) and menials. If so, the customary payments are made from the common heap before it is divided. This practice still prevails in all the Tahsils except Jagadhri but there Mr. Douie deducted no less than one-eighth on the sole ground that a proprietor does not get his proper share of what he finds on the threshing floor. This is undoubtedly true but the landlord of our Assessment Reports must be one who is normally alive to his own interests and I allowed no deduction in Rupar, Kharar or Ambala to cover casual wastage and pilfering. Such a deduction cannot be justified and any allowance of this kind should be made when deducing the true half net assets. The following deductions per cent. were allowed on (A) irrigated (B) unirrigated crops at Settlement and now:—

Period				Rupar.	Kharar.	Ambala.	Naraingarh.	Jagadhri.
At Settlement	..	...		10	10	10 and 12	10	12½
Now	...	...	...	{ (A) 10 (B) ■	{ (A) 10 (B) 8 }	8	10	...

47. Straw is usually divided between the landlord and the tenant in the same proportion as the grain. It was not taken into consideration at Settlement but is now a valuable commodity.

48. I assumed moderate cash circle assessment rates for mangoes based on detailed enquiries into the average value of the annual mango harvest.

49. Practically the only ground for enhancement of the land revenue assessment is the enormous rise in the prices of raw produce, in the value of land and in cash rents. On the whole the zamindar is free to choose the best market for his produce. There can be no doubt that the actual effective rise in prices was at the very least one hundred per cent. three years ago and is now (1920) much more. At the same time the cost of production has greatly increased. The wages of the agricultural labourer are four times what they were thirty years ago. The cost of bullocks and farming implements has probably tripled since Settlement. But the farmer does himself very well and can always find plenty of money for litigation and domestic celebrations. As compared with 1887 he now dresses well, owns abundance of live-stock, contracts comparatively little debt and is decidedly independent. The standard of comfort has risen substantially and the people have become accustomed to a higher measure of prosperity. Still Government might fairly look for an enhancement of 30 to 40 per cent. on account of the rise in prices alone. The holdings are large enough to ensure a sufficient saleable surplus.

50. Estimates of the true half net assets were framed by comparing the results calculated from kind rents, cash rents and the transfer value of land as modified by general considerations. For the cash rent estimates I allowed a deduction for fallows in the Sub-division, but this should not have been done and I did not repeat the process in Ambala and Jagadhri. In calculating the half net assets from transfer values I assumed that investors were content with the moderate profits of 3 per cent. (sales) and 4 per cent. (mortgages). I enhanced the rate to 8 per cent. in Jagadhri where so large a proportion of the mortgagees are Baniyas. The estimates were as follows :—

Taluk			By kind rents.	By cash rents.	By sale prices.	By mortgage prices.	True (including mangoes).
			Rs.	Rs.	Rs.	Rs.	Rs.
Rupar	...	...	5,30,299	6,26,332	7,18,320	8,06,322	5,77,000
Kharar	...	...	6,10,891	7,68,506	8,23,222	8,87,914	7,27,000
Ambala	...	...	5,19,300	6,71,658	5,73,665	5,85,372	5,68,600
Naraingarh (excluding Morni)	...	...	3,96,578	4,66,901	...	...	4,27,800
Jagadhri	...	...	5,92,603	5,16,312	4,32,242	6,20,523	5,89,400

Cash rents are usually paid on selected lands but have been kept down in Jagadhri by a ring of money-lenders. The produce estimate is based on prices which are necessarily assumed with caution and with reference to the whole term of settlement. The estimates based on transfer prices are purely theoretical and have only a comparative value.

51. A produce estimate was not framed in Morni either now or at last Settlement. The new assessment of this tract is based on general economic considerations.

52. The Sub-division came under assessment before the remainder of the District and the two Reports were submitted in the summer of 1917. The expiring demand in Rupar was Rs. 2,31,796 and the full right of Government was not less than Rs. 5,77,000. The people in all circles were prepared for an enhancement of 25 per cent. and I proposed an increase by 21.5 per cent. to Rs. 2,81,910. The demand sanctioned was Rs. 2,94,900, equivalent to 51 per cent. of the true half net assets and 12½ per cent. of the estimated gross produce, with an increase of 27 per cent. on the old assessment.

There was room for a somewhat larger increment in Kharar. I proposed an increase from Rs. 2,55,836 to Rs. 3,23,244 with an enhancement of

28 per cent. The demand sanctioned was Rs. 3,38,200 equivalent to 48 per cent. of the true half net assets and $12\frac{1}{4}$ per cent. of the estimated gross produce, with an increase of 32 per cent. on the old assessment.

53. The expiring demand in the Ambala Tahsil was Rs. 2,34,149. My rates were accepted but the assessment of Rs. 2,92,973 was reduced to Rs. 2,90,000 in round figures, giving an increase of about 24 per cent. It absorbs 51 per cent. of the true half net assets and represents $10\frac{1}{2}$ per cent. of the gross produce.

54. Mr. J. G. Beazley proposed an assessment of Rs. 2,21,178 as compared with the old demand of Rs. 1,80,955. The demand actually sanctioned was Rs. 2,27,380, equivalent to 53 per cent. of the true half net assets with an increase of 26 per cent. on the old assessment.

55. The Morni Hill Tract has not flourished particularly since last Settlement. Cultivation has decreased by one-fifth in the Ghar Circle and by almost one-third in the Pahar. Mr. Beazley attributed this decrease to the decline in population, the abandonment of inferior land and of the wasteful *khi* cultivation, and to a deliberate policy of escaping assessment. The reduction in population down to the year 1911 amounts to 15 per cent. for the tract. Irrigation has decreased substantially, ploughs are stationary, cattle have increased somewhat, communications are wretched. About $7\frac{1}{2}$ per cent. of total cultivated area has been sold and the same amount mortgaged since 1887. Mr. Beazley proposed to increase all the existing soil rates except the almost worthless *khi* by 25 per cent., to enhance the lump demand (current in Bhoj Naggal only) on *harrar* trees (myrabolans) by 50 per cent., and to extend the *harrar* tree assessment to Bhoj Mataur. These proposals were sanctioned. The old demand was Rs. 7,970 and has been enhanced to Rs. 8,726, a rise of 9 per cent.

56. The old demand in the Jagadhri Tahsil was Rs. 2,36,841. I proposed an enhancement by 24 per cent. to Rs. 2,94,604. The revenue actually sanctioned was that proposed by the Financial Commissioner, a demand of Rs. 3,10,000 with an increase of 30 per cent., equivalent to 52 per cent. of the true half net assets and 11 per cent. of the estimated gross produce. I was empowered to bring out a slightly lower total assessment, but as finally determined the assessment in each circle had to approximate considerably nearer to the Financial Commissioner's figures than to my own. I was able to carry out these directions except in the Som Khadar Circle.

The only canal irrigated land in the Ambala District is in the Jagadhri Tahsil where recorded *nahri* amounts to 2,662 acres. Practically all this land lies close to Tajawala where the annual rainfall must amount to 60 inches and is very dependable. Mr. Douie quite justly remarked of this locality that the zamindars had reason to fear not a shortage but an excess of rain. Canal water is clearly unnecessary but irrigation is a relic of former days. *Nahri* land being that which is level and accessible is probably the best in quality. The assessment will consist of a fixed revenue imposed on the land in its dry capacity together with a *nahri parta* or more properly a fixed canal advantage which is remissible if and when canal water becomes permanently unavailable. The rules regulating the remission or imposition of *nahri parta* are contained in the Appendix.

Sums used to be paid to certain jagirdars and to the District Board as their share in the old owner's rate. The question of the abolition of these payments is now before Government.

57. Throughout the District the usual rules as to progressive assessments have been applied, that is to say, in any estate where the enhancement exceeded one-third but was not greater than two-thirds of the old demand, the excess has been deferred for five years. Any excess over two-thirds of the old demand has been deferred for a further period of five years.

Protective leases have been granted to encourage the sinking of wells with the usual term of twenty years during which land irrigated from new wells is exempt from the enhanced assessment.

The postponed amounts are as follows :—

Tahsil.	Number of villages affected.	Amount deferred for five years.	Amount deferred for ten years.
		Rs.	Rs.
Rupar	93	5,613	190
Kharar	153	11,080	815
Ambala	50	3,950	160
Naraingarh	39	1,420	...
Morni	1	12	...
Jagadhri	51	3,575	70
District	387	25,650	1,235

58. The results of re-assessment are as follows :—

Results of re-assessment.

Tahsil.	Old demand.	Sanctioned new demand.	New demand actually imposed.	ACTUAL INCREASE.		AMOUNTS DEFERRED ON ACCOUNT OF	
				Amount.	Per cent.	Protective leases.	Progressive assessments.
	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
Rupar	2,81,796	2,94,900	2,94,782	62,986	27	1,885	5,808
Kharar	2,55,886	3,38,200	3,39,544	83,708	33	412	11,895
Ambala	2,84,149	2,90,000	2,91,896	57,247	24	112	4,110
Naraingarh	1,80,955	2,27,380	2,24,885	43,880	24	...	1,420
Morni	7,970	8,728	8,803	833	10	...	12
Jagadhri	2,36,841	3,10,060	3,04,750	67,909	29	34	3,845
District	11,47,547	14,69,206	14,63,560	3,16,013	28	2,359	20,885

The forecast was in general terms only and the view was expressed that the enhancement would be within the 25 per cent. limit for the District. The actual result has been to raise the demand from Rs. 11,47,547 to Rs. 14,63,560, an enhancement of Rs. 3,16,013 or 28 per cent. Re-assessment has been financially successful and I have no reason to believe that there are now any appreciable inequalities in the revenue demand either by Tahsils or by estates.

CHAPTER V.—DISTRIBUTION OF THE DEMAND.

59. The village assessment statistics were based throughout on the new figures. My estimates for each estate as made at the time of inspection were checked by figures obtained in the following ways :—

Mode of distributing revenue over estates.

- (1) adding a theoretical enhancement to the existing revenue ;
- (2) applying suitable hypothetical circle rates ;
- (3) a cash rent estimate ;
- (4) a crop rate estimate ;
- (5) an estimate on total matured area.

In distributing the total new assessment sanctioned for each circle over the different estates my principal guide was the estimate I made at the time I inspected each village. In the Rupar Sub-division and Jagadhri I had to depart somewhat from these preliminary estimates because the assessments as finally sanctioned exceeded my proposals, still they form the fundamental basis of the new village assessments. For purposes of comparison and check I framed other estimates for each estate much as I did at inspection time but they were based upon the sanctioned and not upon the proposed figures. In Ambala Tahsil my assessment was accepted as it stood.

My method of framing the produce estimate in the Rupar Sub-division enabled me to deduce absolutely accurate matured rates for the classes of land in each circle. Similarly the soil discrimination throughout the Ambala Tahsil, the Naraingarh Seoti and the Jagadhri Bangar with separate rates for loam and clay was of great assistance to accurate village assessment.

The circles are fairly homogeneous in character and do not call for internal differential treatment. Exceptions to this statement are those just mentioned with their clay-loam differentiation, the Rugar Ghar-Bet circle with its class distinction between upland (Ghar) and riverain (Bet) lands and the Ghar circles throughout the district. The last named include estates varying in quality from rich loam to the poorest stony soil, and I had to depart largely from circle rates in assessing the best and worst villages of the Ghar tracts.

60. The Naib-Tahsildar had already at his final attestation enquired from the zamindars of each village as to the manner in which they desired to distribute the new demand over holdings (*tariqa bachh*). The file was held over till the new demand was announced. As each village was informed of its new assessment the files thus prepared were produced, attested by the lambardars and the method of distribution formally sanctioned in their presence. Disputed cases were few and far between.

The usual mode of distribution is by an all-round rate on the cultivated area. Where any distinction is made it may be by irrigation (Rugar Tahsil) or by soils (Ambala Tahsil). Thus the rate on well land may be double that on *barani* or the proportion of the assessment borne by *chahi*, loam and clay may be in some such proportion as 5 : 3 : 2. It is very rare to find a lump *abiana* placed on a well. Where there is a *qismwar parta*, *banjar* is generally *kharij bachh* except in Jagadhri with its abundance of land and heavy rainfall :—

Tahsil.	Estates in which the distribution is by <i>sarsari parta</i> .	<i>Qismwar parta</i>		Total.
		On cultivated alone.	On cultivated and <i>banjar</i> .	
Rugar ...	287	74	25	386
Kharar ..	318	53	25	396
Ambala ...	274	26	6	306
Naraingarh ...	264	32	16	312
Morni ...	...	1	13	14
Jagadhri ...	318	...	69	387
Total ...	1,461	186	154	1,801

61. The following table gives details of the objections and appeals filed from each of the tahsils to March 31st, 1920 :—

TAHSIL.	NUMBER OF OBJECTIONS.		NUMBER OF APPEALS TO			
	Total.	Accepted.	<i>Commissioner.</i>		<i>Financial Commissioner.</i>	
			Total.	Accepted.	Total.	Accepted.
Rugar ...	103	18	14	...	...	...
Kharar ...	175	24	20	1	...	...
Ambala ...	87	9	11	...	...	...
Naraingarh ...	56	1	1	...	...	...
Morni ...	1	1	...	...	...	...
Jagadhri ...	127	23	...	...	...	...
Total ...	553	76	38	1	...	...

The number of objections is very large, but I have no reason to believe that there is any considerable dissatisfaction with the new assessments, otherwise there would have been more appeals to the Commissioner. The people on the whole feel that they have been treated quite justly. Petition-writers

were in evidence at each place where the assessments were announced and even if nothing was gained there was very little to lose in presenting a speculative objection. Some of these had been written beforehand and one village was tactless enough actually to present its objection before the new assessment was announced.

62. The following table shows the amount of case work which was disposed of during the course of settlement:—

Class of case.	Settlement Officer.	Assistant Settlement Officer.	Extra Assistant Settlement Officer.	Total.
Mutation and partition appeals	575	159	...	734
Lambardari	842	212	174	1,228
Patwari and kanungos	754	268	186	1,208
Musafi revisions	2,226	319	...	2,545
Riverain boundaries	3	...	...	3
Partitions ... ..	...	127	1,092	1,219
Had barari	20	296	1,154	1,470
Other revenue cases	1,934	467	1,404	3,805
Enhancement of rent ... ..	...	2	...	2
Criminal cases	17	...	...	17

CHAPTER VI.—MISCELLANEOUS.

63. “There is no other district in the Punjab presenting so much difficulty in respect of revenue assignments; none it is believed in which so large a proportion of the revenue has been assigned in perpetuity in one form or another, and none certainly in which there are so many difficult questions connected with the past history and present circumstances of the *jagirs*.” I quote these words which are as true to-day as when they were written, from the admirable summary on the subject of assigned revenue which forms Chapter VI of Mr. Kensington’s Final Settlement Report of the Ambala District, 1893. Mr. Kensington noted that much was done at the Regular Settlement to evolve order out of chaos and much more in his own time to simplify and systematize the whole subject.

The causes of the present state of things have been sufficiently described in paragraph 13 above. I also invite a reference to paragraphs 100—127 of the Land Administration Manual which contain a detailed description of the *cis-Sutlej jagirs*. A code of orders and rules gradually came into being and the general effect of the orders was to constitute three separate classes of *jagirdars* known as:—(1) Major *jagirdars*; (2) *Pattidari jagirdars*; (3) *Zaildars* or subordinate feudatories of the major *jagirdars*. Within the last few years a new class of *war jagirdars* has been created.

The major *jagirdars* including nearly all the leading Sardars of the district, are entitled to the revenue of large groups of villages. The only major *jagir* which has lapsed since last Settlement is the Purkhali estate of 14 villages in the Rupar Tahsil.

The *pattidari jagirdars* are the lineal descendants of the minor fraternities who overran the country in 1763 or of those who were summoned later from the *Manjha*. These fraternities divided up the villages which they seized in shares, they were recognised as independent holders and were in most cases given the status of 1809, that is, whether the present holders are represented by one or two sharers or by hundreds, all representatives within the *patti* have rights of inheritance as collaterals from sharers dying without issue provided that they and the deceased sharers can trace common descent from an ancestor living in 1809.

The *zaildari jagirdars* have the status of 1847; they differ from the *pattidars* in that they are not independent but hold under the big Sardars who claim the right to succession to shares without heirs. The practical difference therefore between the *zaildars* and *pattidars* is that when the whole or part of

a zaildari *jagir* lapses on failure of heirs, the lapsed revenue goes not to Government but to the major *jagirdar* concerned. Should the major *jagir* lapse to Government the zaildars pass into the category of ordinary *pattidars* retaining their 1847 status.

Mr. Kensington's *jagir* work was embodied in a series of imposing registers which are described in paragraph 133 of his Final Report. A complete revision has now been carried out with a separate file for each *jagir*—a task of considerable magnitude. The results have been incorporated in a new edition of Mr. Kensington's registers. Mr. Kensington's work was so thoroughly done that no matter connected with individual *jagirs* has cropped up of sufficient importance to be referred to Government.

64. The amount of *khalsa* and gross assigned revenue (including commutation) by the final new demand is shown in the following statement. Assigned revenue amounts to 43 per cent. of the total :—

Tahsil.	Jagir.			Khalsa.			Total.		
	Rs.			Rs.			Rs.		
Rupar	1,00,552			1,94,180			2,94,732		
Kharar	1,61,969			1,77,575			3,39,544		
Ambala	1,09,057			1,82,339			2,91,396		
Naraingarh	96,260			1,28,075			2,24,335		
Morni	8,803			...			8,803		
Jagadhri	1,48,552			1,56,198			3,04,750		
Total	6,25,193			8,38,367			14,63,560		

No dispute of any importance regarding the *jagir* status has arisen during the last thirty years except the case of the Afghans of Aurangabad, Jagadhri Tahsil, who were regarded as *muafidars* at the last Settlement. On their representation it was held that their *chaharami* rights were in the nature of a *jagir* and they were given the status of 1852.

The total sum including commutation now distributed among the different classes of *jagirdars* is as follows :—

	Rs.		
Major <i>jagirdars</i>	3,22,819		
<i>Pattidari jagirdars</i>	2,85,749		
Zaildari <i>jagirdars</i>	17,125		

65. The following table shows by Tahsils the detailed figures of *pattidari jagirs* :—

Tahsil.	Total <i>pattidari jagir</i> revenue.	VILLAGES IN WHICH HELD.			TOTAL NUMBER OF		Number of <i>pattis</i> .
		Whole.	Part.	Total.	Families.	Sharers.	
	Rs.						
Rupar	33,810	16	31	47	148	405	8
Kharar	51,954	31	103	134	460	1,871	26
Ambala	97,804	48	103	151	213	814	21
Naraingarh	32,919	13	72	85	143	532	27
Jagadhri	26,262	85	162	247	202	871	29
Total	2,85,749	193	471	664	1,166	4,493	111

The number of sharers has decreased since Settlement from 4,582 to 4,493 and this is to be accounted for by the heavy mortality. Petty *jagirdars* who own no lands find it difficult to get married particularly as they have to import their wives from their original homes in the Manjha.

The following table shows the *pattidari* families and sharers classified according to the value of their shares as now ascertained :—

Value of shares.			2 annas and under.	2 annas to 4 annas.	4 annas to Re. 1.	Re. 1 to Rs. 5.	Rs. 5 to Rs. 10.	Rs. 10 to Rs. 25.	Rs. 25 to Rs. 50.	Rs. 50 to Rs. 100.	Rs. 100 to Rs. 500.	Over Rs. 500.	Total.
Families	...	...	9	5	41	7	133	124	137	198	384	131	1,166
Shares	...	...	40	45	808	283	1,105	991	595	525	506	100	4,493

Nearly 400 sharers draw amounts of one rupee and less.

Mr. Kensington's figures included Pipli Tahsil.

66. Certain perennial problems have once more asserted themselves which I find were discussed at great length from all possible points of view at last Settlement only to be dropped in the end. A thorny question arises from the minute sub-division of *pattidari jagir* shares which tends to grow more aggravated with the passage of time. There are 85 shares of four annas and less, and 303 shares of over four annas but not more than one rupee; assignees of such sums not infrequently neglect to claim them. Mr. Kensington strenuously upheld the view that Government could not abolish even the least of the perpetual grants without a breach of faith. The labour involved in the upkeep of these minute accounts was nothing in comparison with the odium which would be incurred if Government did anything in contravention of its solemn engagements. In 1800 the Financial Commissioner held that it would doubtless be most advantageous to buy up the petty shareholders if such a step were possible. But proposals for compulsory purchase had already been negatived and it was exceedingly unlikely that sharers would voluntarily commute their annual income and, what they prize still more, the title of *jagirdar* for a lump payment. Till it would appear that they are prepared to do so it was useless to pursue the subject further. The Financial Commissioner was not prepared to advise Government to attempt to extend the rule of primogeniture to *pattidari jagirs*—see Printed Proceedings, January 1891, Nos. 23-24 (Rev. & Agri.—Rev). The position remains unchanged. It is clear that unless there is an element of compulsion on the one side or of voluntary relinquishment on the other, nothing can be done. During my six years in the Ambala District I have not heard of a single *jagirdar* who was prepared to commute his *jagir* for a cash payment; there is no reason why he should. It is the social prestige that is valued by the petty *pattidars*. We might have honorary *jagirdars* but that would be a contradiction in terms.

67. The offices of *sarbarah* and *sarkarda* are quite distinct and are seldom held by the same person. A *sarbarah* is usually one of the *jagirdars* and is an agent, unpaid as far as Government is concerned, who collects the revenue of the villages assigned to his family, maintains the complicated system of horse-men's shares on which the family *jagir* is divided, and distributes accordingly whatever money he collects. The *sarkarda* has nothing to do with the collections. It is his business to report births and deaths and to realise and to pay into the Treasury the commutation money for his branch of the *jagir*; in return for these services he receives from Government 5 per cent. of the commutation.

Whenever direct collection is abolished so much of a *sarkarda's* duties as is involved in the payment of commutation ceases. Can any measures be suggested for the better attestation of the heirs of the assignees? The weak point of all such measures seems to be that it is as easy to report supposititious events as real ones. Then the reporters cannot act till these matters which

are of a peculiarly delicate nature are reported to them. Even if direct were replaced by official collections Mr. Kensington urged that the *sarkarda's* office be maintained without any reduction of his emoluments on the ground that Government is entirely dependent on him for a correct record of families on which to enforce its claim to heirless shares. In 1890 the Financial Commissioner approved Mr. Kensington's suggestion that a tentative annual attestation of the Kharar *haftami jagirdars* should be substituted for the system under which the *sarkarda* reports or is supposed to report every birth and death as it occurs. The Deputy Commissioner was to try the new method for one year and then report. Captain (afterwards Lieutenant-Colonel) Clem. G. Parsons in his Administrative Hand Book of the Ambala District, 1898, is silent on the point though eleven out of the forty chapters deal with *jagir* matters. The method is still in force but has never been extended.

The amount of *magruqa jagir*, or *jagir* income officially collected, has increased greatly since Settlement either by the order of the Collector or by the request of the *jagirdar* :—

Tahsil.					<i>Magruqa jagir</i> in 1887.	<i>Magruqa jagir</i> in 1920.
					Rs.	Rs.
Bupar	...	...	...	..	915	9,848
Kharar	...	...	...	...	2,354	30,834
Ambala	...	...	...	...	12,961	78,874
Narangarh	...	...	...	...	3,825	31,368
Jagadhri	...	...	...	...	11,810	52,222
Total					31,865	2,03,141

Account work in the Deputy Commissioner's Office has increased correspondingly and gives a great deal of trouble but the *jagirdars* pay for it by the 5 per cent. charge known as *haq ul tahsil*. Both the fragmentation of petty *jagir* shares and the complication of accounts work are perfectly natural consequences of the Government's own policy and engagements, so it is no use complaining about them as if they were something which ought never to have happened.

In March 1919 the question of *sarkardas* was raised once more by Mr. R. R. Abbott, Deputy Commissioner, Ambala. He observed that the lambardars and not the *sarkardas* paid the commutation into the Tahsil in the case of *magruqa jagir*; even when collections were made direct the lambardars frequently performed this function of the *sarkardas*. Again the reporting of births and deaths was often done by the *patwari* or lambardar and in any case it was done very badly and irregularly. Mr. Abbott recommended—

- (1) Commutation shall cease to be shown separately in the Tahsil accounts and shall be incorporated in *khalsa* without any distinction.
- (2) *Sarkardas* shall be abolished or at any rate the present numerous body should be replaced by one or two men with substantial *inams*.

The first matter concerns accounts work of an intricate character. I suggest that an expert from the Accounts Department be deputed to investigate the matter on the spot (at Sadr and Kharar for choice) and to report on what reforms are possible in certain contingencies as regards village, Tahsil, and Sadr accounts.

As regards the second matter I observe that there is no guarantee that the comparatively few men with substantial *inams* or even the lambardars will be more efficient than the present *sarkardas*. However in one Tahsil the collection of commutation and the internal reporting of domestic events might be entrusted to lambardars who should receive a reasonable commission. It would be advisable to retain the *sarkardas* who represent *jagirdars* living outside the district.

68. The revision of revenue free grants other than *jagir* was carried out on the usual lines. In the cases of grants for the maintenance of institutions my efforts were directed towards maintaining their proper character. There is always a tendency in such cases for the managers of the institutions to become *de facto* owners of the grants. The grants from *jagirdars* in purely *jagir* villages were not revised as they are completely under the *jagirdars'* control. In shared villages deference was paid to the *jagirdars'* wishes if assigned revenue preponderated.

A method of treating small grants made in return for village services or in favour of village institutions is to strike them off the Government list but to leave the land unassessed for one period of settlement to see whether the landlords will agree to continue the *muafi* from themselves—section 570, Settlement Manual. When they are treated in this way trouble is saved to revenue officials, and what is more important, the assignments are restored to their original position as grants made by the village communities and under their control. These instructions are amplified in Correction Slip No. 109, dated the 2nd October 1916, to paragraph 196 of the Land Administration Manual. My policy towards small grants throughout the district was based on these rules.

The arithmetical result of the revision has been a reduction in the total number of *muafis* from 1,372 to 784:—

Tahsil	DURING THE PLEASURE OF GOVERNMENT.		PERPETUAL WITHOUT CONDITIONS.		DURING MAINTENANCE OF INSTITUTIONS.		FOR LIFE OR LIVES.		FOR TERM OF SETTLEMENT.		TOTAL.	
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.
		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.
Kharar ...	49	181	24	228	15	276	4	6	10	274	102	980
Rupar ...	...	...	49	974	...	...	1	2	18	779	68	1,755
Narsingarh ...	...	...	144	1,469	...	...	9	416	35	297	188	2,182
Jagadhri ...	...	...	107	722	...	...	19	181	50	426	176	1,329
Ambala ...	...	...	157	1,215	5	123	9	156	79	571	250	2,065
Total ...	49	181	481	4,603	20	399	42	761	192	2,347	784	8,291

69. The zaildars of the Ambala District were technically inamdars only, and the zaildari system was not in force. A good description of the old scheme is contained in paragraphs 142 and 143 of the Ambala Final Settlement Report, 1893.

The introduction of the zaildari agency into the Punjab was being effected during the early stages of Mr. (latterly Sir A.) Kensington's North Ambala Settlement. The Settlement Commissioner thought it worthy of consideration whether in the Ambala District persons holding *jagir* shares or other *jagir* grants, and who permanently resided in the circle, should not be eligible in addition to village headmen—see the seventh item in Printed Proceedings, Revenue and Agriculture Department—General, for July 1884, No. 9. The Financial Commissioner observed that neither the antecedents, history, nor the character of the Ambala District *jagirdars* would seem to furnish any reason for refusing to establish a zaildari system on the ground that it would be distasteful to the holders of *jagirs*. He agreed therefore with the views stated by Colonel Wace and the Deputy Commissioner, Mr. Bulman, and recommended that the zaildari system be extended to the Ambala District with the exception of the Morni Hill Tract. As regards the eligibility of *jagirdars*, if a *jagirdar* should happen to be a leading agriculturist, and if he should also represent one of the principal tribes of the circle in which his *jagir* was situated, and he should be otherwise fitted for the post, he would naturally be selected as zaildar. The liability of a *jagirdar* to contribute 1 per cent. of his *jagir* income for the inam of the zaildar had been recognised and acted upon without demur in every district into which the zaildari system had been introduced. There

appeared to be no reason for according exceptionable treatment to Ambala, and the Financial Commissioner recommended that the usual practice be followed, and the 1 per cent. for zaildars deducted alike from *khalsa* and *jagir* assessments. These recommendations were approved by Government throughout—see Printed Proceedings, July 1884, No. 10.

But the Government orders were never carried out. Differences of opinion led to postponement, and eventually to an entire change in the intentions of Government. The arguments for this *volte face* are contained in item No. 19 of Printed Proceedings, Revenue and Agriculture Department—Revenue, January 1891. The Proceedings of 1884 and 1891 contain about all possible arguments for and against the suitability of the zaildari system for the Ambala District. Mr. Kensington's proposals were examined by the Financial Commissioner in a letter to Government which is printed as No. 17 of the 1891 Proceedings. The Financial Commissioner held that the Settlement Officer had failed to show sufficient cause for differential treatment, and recommended that the zaildari system should be introduced into Ambala in its integrity. However the Lieutenant-Governor resolved to allow during the pleasure of Government to all assignees of land revenue in the Ambala District an exemption from contribution to the expense of a zaildari agency. Apparently Sir James Lyall was much impressed by the fact that the *jagirdars* were already paying a two anna in the rupee commutation charge, and was indisposed to compel them also to meet the zaildari levy. He accepted Mr. Kensington's view, a view which I may say has not proved correct, that the smaller allowances would be sufficient payment for any work that was likely to be got out of the Ambala *inamdar*-zaildars. It was directed that the gross expenditure upon all *inams* should not exceed a charge of 1 per cent. upon the *khalsa* land revenue and commutation money, and as over two-fifths of the revenue of the district is assigned in perpetuity, the first class *inams* worked out at Rs. 120 and the second class *inams* at Rs. 90 only.

The result of these orders was that since the year 1890 work of quite the average standard was done by zaildars in the Ambala District in return for a remuneration which was about half the amount fixed by Government as a fair rate of payment. The *jagirdars* were already receiving full value for the commutation money paid by them to Government. All that was recorded in the correspondence referred to above about the inutility, unpopularity, and lack of influence of the *jagirdars* is as true to-day, with a few honourable exceptions, as when it was written.

This is particularly noticeable when tested by the recruiting results. Very few of the *jagirdars* could produce recruits, and they frankly admitted it. Only three years after the new system had been inaugurated, the Deputy Commissioner had to ask for a revision of the *inam* arrangements owing to the considerable dissatisfaction of the *inamkhwars*. The old arrangements cannot be said to have succeeded, and the allowances were totally inadequate.

A reference was made to Government on the above lines in April 1918. The final result was that Government accepted my view of the matter and the combined zaildar and safedposh surcharge of 1½ per cent. will henceforth be paid on both *khalsa* and assigned revenue. There were only one or two safedposhes in each Tahsil. For the future there will be one safedposh in each zail. There will be three grades of zaildars and both zaildars and safedposhes will receive allowances which at last compare favourably with those current in adjacent districts. In the Sub-division the remuneration will be—zaildars, 1st grade, Rs. 300; 2nd grade, Rs. 225; 3rd grade, Rs. 175. Safedposhes, 1st grade, Rs. 60; 2nd grade, Rs. 50. The rates of remuneration will be somewhat less in the other tahsils. I regard this as one of the most satisfactory things done in the new settlement.

70. During Settlement an important decision—Revenue Ruling No. 124—1915-16—was made on the claim of a lam-

Pachotra and *sir jagir* revenue.

bardar to village officer's cess on land revenue from *sir jagir* land, that is to say revenue assessed on land owned by the proprietor to whom the said revenue is assigned. The land-owner in such a case of course pays no land revenue as the sum assessed happens to be payable by and to himself and is therefore not capable of actual collection either by the lambardar or by the proprietor himself. The case originated in the

Munsiff's Court, Jagadhri, and went up on revision to the Financial Commissioner's Court. It was held that—

- (I) No particular lands or classes of land have been exempted from the village officer's cess and *pachotra* is leviable on *sir jagir* land as it is assessed to revenue;
- (II) The lambardar is only entitled to *pachotra* on revenue actually collected by him;
- (III) The lambardar must therefore collect the *pachotra* leviable on *sir jagir* land but is not entitled to keep it and must pay it into the Government Treasury.

71. There are 4,033 lambardars in the Ambala District. Thanks to the new Settlement the average *pachotra* per lambardar approximates to Rs. 20, but it must not be forgotten that the lambardar receives *pachotra* only on the land revenue that he actually collects. It is a generally accepted proposition that the present number of lambardars or village headmen is excessive. Authority is said to be so much divided that no headman is really influential and not a few have become too poor to be proper representatives of the other landowners. My personal experience as Settlement Officer of the Ambala District does not bear out this statement although the number of lambardars judged by the Rs. 20 *pachotra* standard was greatly in excess before the new assessments were announced. I found that there was almost invariably a keen contest for vacant lambardaris and that considerable disappointment was shown when I recommended reduction. The post of lambardar is much appreciated so it is plain that the headman still commands influence and respect. I admit the attractions of substantial emoluments but a rise in the average annual *pachotra* from Rs. 20 to Rs. 25 say is neither here nor there and need not be discussed because the sum in any case is comparatively small in these times. As regards the dictum that not a few lambardars have become too poor to be proper representatives of the other landowners I am of opinion that the amount of the *pachotra* and that of the land owned are only partial measures of the influence wielded by a lambardar in his village. Otherwise a large proportion of the headmen in the Jagadhri Tahsil would be Baniyas.

I have expressed my inability to prepare a general reduction scheme as required by Settlement Manual, paragraph 577, and Land Administration Manual, paragraph 330. My four-and-a-half years' experience as Settlement Officer has taught me that every reduction proposal must be treated on its merits with reference to the time when the vacancy occurs and not to some arbitrary period such as that of the preparation of a cut and dried reduction scheme. In brief a general reduction scheme is unworkable and is out of date almost before the ink with which it was written has dried.

The reception given to my reduction proposals by four successive Commissioners has shown me that a wide divergence of views exists with regard to the circumstances under which a reduction may or may not be effected. I consider that no useful purpose is served by preparing a general scheme at Settlement for the reduction of lambardars. The advisability of reduction is unquestionable, but it should only take place when vacancies occur under favourable circumstances. Each case must be treated on its merits at the time of its occurrence.

I regret to say that the Financial Commissioner did not agree with my views but that communication only reached me in January 1920, when it was too late to take any action. I was asked to suggest the reduction which I held to be desirable *per se* having regard to the relevant considerations and on the assumption that an occasion will arise sooner or later when the reduction proposed can properly be enforced, that is to say if the work were to be properly done I was required to consider each of the 4,033 cases with its relevant considerations on its merits. With all deference I submit that an enquiry involving such an enormous amount of labour in view of the above remarks is not wanted.

72. An account of the occupancy tenants is given in Mr. Kensington's Final Report of the 1887 Settlement. No further enquiry into their status was necessary and none has been attempted in this Settlement, Mr. Kensington's.

ton's description is still sufficiently accurate. Suits for the enhancement or reduction of rent have not been numerous.

It is very desirable to fix a uniform scale of enhancement for the guidance of Courts in determining a fair and equitable rent under the meaning of Section 25 of the Tenancy Act. Following the proposals embodied in Mr. Craik's Final Report of the Amritsar Settlement I have suggested that some such scale as the following would be suitable for the Revenue Courts of this district in dealing with suits for enhancement :—

- I. In the case of occupancy tenants under Section 5 (1) (a) the legal limit of two annas per rupee might be decreed at once.
- II. In the case of occupancy tenants under Section 5 (1) (b), (c), (d) for whom the legal limit is six annas per rupee—
 - (a) if the old *malikana* is less than two annas per rupee, raise to from two to four annas per rupee ;
 - (b) if the old *malikana* is two annas per rupee or more, raise from four to six annas per rupee.
- III. In the case of occupancy tenants under Sections 6 and 3, for whom the legal limit is twelve annas per rupee—
 - (a) if the old *malikana* is less than two annas per rupee, raise to from four to six annas per rupee ;
 - (b) if the old *malikana* is from two to four annas per rupee, raise to from six to eight annas per rupee ;
 - (c) if the old *malikana* is more than four annas, raise to from eight to twelve annas per rupee.
- IV. But in all cases regard should be had, among other considerations, to the former and present assessment of the holding at least till five years after re-assessment. If the revenue demand has been largely increased thereby involving a large addition to the amount of the *malikana*, this would be a reason against a considerable increase in the rate, whereas if the revenue demand has been considerably reduced by re-assessment, that would be a reason for increasing the rate of *malikana*, as otherwise the landlord would lose part of the amount.

73. As an experimental measure an English record-of-rights was prepared by Mr. A. Campbell, I.C.S., for Ambala

Cantonment records-of-rights.

Cantonment in the cold weather of 1909-10. The bazars were excluded as town sites and the record covered all the rest of the Cantonment, including the areas occupied by bungalows. The printed report went up to Government under cover of Senior Secretary to the Financial Commissioner's letter No. 558-4664, dated the 17th of October 1910, to the Chief Secretary to Government, Punjab. Some interesting points were discussed. It was suggested that an English register of mutations should be kept and the Cantonment Head Clerk was to be the 'patwari' for mutation purposes. I may say that no further action has been taken, and that Mr. Campbell's record-of-rights remains a dead letter. Writing in 1912 the Deputy Commissioner of Ambala noted with regard to the proposed Cantonment Record-of-Rights Act that the existing state of affairs in Kasauli Cantonment was deplorable. Neither the house-owners nor the Cantonment had any clear idea of their respective property rights, and the main object to be attained in Kasauli was the determination of the rights and responsibilities of Government on the one hand and of the house-owners on the other. In the year 1917 I formulated proposals for the preparation of a record-of-rights in Kasauli Cantonment. The Government of India decided that the proposals should be held over until the conclusion of the War and I heard nothing more about the matter till after the close of Settlement.

The land for Ambala Cantonment was acquired more than seventy years ago and part of it is still being paid for by a system of pensions in perpetuity. This is a matter which calls for investigation. Government ought to know the amount of these pensions and the relation they bear to the capitalised value of the land with a view to buying out the pensioners.

74. Appendix III contains the new rules regulating the assessment of lands subject to river (Part A) and torrent (Part B) action as approved by the Financial Commissioner. The cases of estates exposed to torrent action are similar throughout the district while the rules with regard to estates on the River Sutlej and the Sirsa Nadi in the Rupar Tahsil have been found quite suitable for the Jumna Khadar of Jagadhri. The rules are modelled on those sanctioned for the Hoshiarpur District with suitable modifications.

The superior class rate in Part A, section 8, is the full circle *sailab* rate. The inferior class rate is that sanctioned for the Hoshiarpur Bet and is the same for both the Rupar Bet and the Jagadhri Khadar.

In the first section of Procedure I advocated a change from the old rules. It is usual for a di-alluvion enquiry to be made if the revenue to be reduced or added in any estate is not less than a certain sum, in Hoshiarpur one rupee. This absolute rule takes no account of the size of the estate and the amount of its assessment, nor does it contemplate the nature of the change. Thus one rupee's worth of damage may consist of a large number of small items concerned with individual holdings, each of which is quite negligible, yet the authorities had no option but to hold the enquiry. Again one single holding may have suffered to the extent of fifteen annas, yet no enquiry can be made. I considered the existing rule unsuitable as the question should be considered both from the individual and the collective point of view. The change that I recommended (and which has been sanctioned) makes due allowance for both aspects. It is incorporated in the third sentence of Procedure, section 1.

It is understood that inspections in the case of Part A estates exposed to the action of the Sirsa Nadi and the Rivers Sutlej and Jamna will be annual and in all other cases (Part B) quadrennial, subject to the exception noted in the latter part of Part B, section 2.

The difference in treatment between Part A and Part B villages is to be noted. The full circle *sailab* rate is fixed for all the former estates whatever their assessment or revenue-paying capacity may be, while the latter pay at the individual rates fixed at Settlement, and this method is certainly more equitable. In case of hardship to Part A villages the Collector should not hesitate to make suitable recommendations.

75. Serious failures of the harvest are rare in the four submontane Tahsils which are regarded as secure tracts. The case is different with the Ambala Tahsil owing to the large areas of hard clay, the inferior character of much of the loam soil, the weakness of the proprietary body and an almost total lack of protection by irrigation. The entire Ambala Tahsil is now one assessment circle only with a soil discrimination into loam and clay throughout. Bad clay tracts lie to the south-east and south-west corresponding with the old Mulana Dakar and Ambala Dakar assessment circles respectively. The map accompanying the Ambala Tahsil Assessment Report, 1918, discriminates between the areas containing (A) less than 25 per cent. *dakar*, (B) 25 to 50 per cent. *dakar*, (C) over 50 per cent. *dakar*;—

Class.	Number of estates.	Cultivated area in acres.	Percentage of total cultivated area.
A	167	99,004	59
B	73	42,913	26
C	65	25,588	15
Total ...	305	167,505	100

Only class C need be regarded as insecure. The two remaining classes are secure enough except in the very worst seasons. The Kharif and the Rabi instalments are usually equal and the danger rate should be the same for each harvest. By his Junior Secretary's letter No. 51-41-K-3, dated the

23rd March 1920, the Financial Commissioner has been pleased to sanction the following danger rates per acre for the Ambala Tahsil :—

					Rs.	A.	P.
Class A	4	0 0
Class II	3	8 0
Class C	2	8 0

As regards future revenue policy, there is no doubt that cultivation is very uncertain in the clay villages of the Ambala Tahsil and no revenue is light enough to be paid in good and bad seasons alike. A heavy assessment collected with discretion, suspensions being given whenever bad seasons occur, would be less oppressive than a very moderate one collected without any regard to the great harvest fluctuations. The proper use of the crop returns is the key towards successful revenue management. Suspensions should be granted freely in poor years and these should rarely become remissions because tracts which suffer most from drought are the very ones that have the largest surplus in good years. There need be no hesitation in allowing suspensions to run on if each harvest is carefully watched and recoveries made from time to time whenever a good season provides the landowners with a sufficient surplus.

In rainy years these flat clay areas are subject to outbreaks of fever followed by pneumonia. I do not think that any large schemes of drainage are either called for or practicable. The people should be provided with adequate dispensaries. The Ambala Tahsil clay tracts ought to be regularly visited by District Officers.

76. An enquiry has been made in all the tahsils of the Ambala District regarding the dates of payment and the mutual proportions of the revenue instalments. Speaking generally annual revenue is paid in two equal instalments, one after the Kharif harvest and the other after the Rabi harvest. Both zamindars and officials were agreed that as a rule the existing practice should continue. The usual dates of payment were grouped around the 1st of January for the Kharif instalment and the 15th June for the Rabi instalment. In the Sutlej and Jumna riverain tracts the Kharif instalment is collected 10 or 15 days later because it is largely paid from cane.

I found there was a unanimous desire that the dates for the payment of both Kharif and Rabi instalments should be advanced by at least 15 days. The extension was specially required for the Kharif instalment which for example was due in the Ambala Tahsil from the 10th of December to the 10th of January. Dates in December are clearly inadvisable where cane pays an appreciable part of the instalment. Then again the Christmas holidays form a serious interruption.

Wheat generally pays the Rabi revenue. Reaping commences by the beginning of Baisakh, i.e., 12th April, and harvest operations occupy six weeks. If the zamindar is compelled to sell immediately he gets less favourable rates than if he could hold up his produce for a couple of weeks longer. Similarly where cane is of importance, some delay is advisable as this crop is not disposed of till the end of January or even later. The Rabi instalment in Jullundur is due on the 1st of July and in Ludhiana between 15th June and 15th July. The Ludhiana Kharif instalment is due between the 15th December and 22nd January. The drawback to this is that all the days from the 24th of December to the 1st of January inclusive are holidays.

I have recommended the following scale of dates for the entire district except Morni :—

Kharif instalment	...	...	...	2nd to 25th January.
Rabi instalment	...	...	...	10th June to 10th July.

The actual dates within these limits will be fixed to suit particular localities. The Morni dates should be 15 days after those of the rest of the district.

77. The experience gained from settlement has led to changes in the district establishment of patwaris and kanungos.

During the period of thirty years which has elapsed since last Settlement the totals of field numbers have increased by the following percentages :—

Rupar 37 ; Kharar 27 ; Ambala 17 ; Naraingarh 32 ; Jagadhri 10.

The Financial Commissioner sanctioned a revision of the patwari establishment throughout the district as detailed below :—

Tahsil.	FIRST GRADE PATWARIS ON RS. 14.		SECOND GRADE PATWARIS ON RS. 11 OLD SCALE, RS. 12 NEW SCALE.		THIRD GRADE PATWARIS ON RS. 10.		ASSISTANT PATWARIS ON RS. 6 OLD SCALE, RS. 8 NEW SCALE		TOTAL.	
	Old scale.	New scale.	Old scale.	New scale.	Old scale.	New scale.	Old scale.	New scale.	Old scale.	New scale.
Rupar	29	21	29	41	15	21	5	5	78	88
Kharar	32	22	32	43	15	22	5	5	84	92
Ambala	29	18	29	37	15	18	5	5	78	78
Naraingarh	26	16	26	33	14	17	5	5	71	71
Jagadhri	27	17	27	34	13	16	5	5	72	72

These changes have involved a revision of the patwari circles in all five tahsils. In order to avoid hardship to the first grade patwaris the Financial Commissioner was pleased to sanction a gradual reduction in this grade as vacancies occurred. The new scales are based on the standard grading and scale of pay in force till the end of Settlement.

As regards field kanungos the number was three in each of the five Tahsils. It has been increased to four in the Rupar, Kharar and Ambala Tahsils only.

78. The important work of selection and training of patwari candidates has received due attention. There was no dearth of candidates who had passed the Middle School Examination but they were usually of non-agricultural classes especially Baniyas and Brahmans. I had some difficulty in making up the proportion of candidates required by the rules to belong to notified agricultural tribes. In the year 1916 a full complement of candidates was selected and received instruction in the field under the immediate supervision of experienced patwaris. One hundred and thirty-one attended the examination held in December 1916, of whom 104 passed. After the close of field work a formal patwari school was opened in April 1919, and the examination was held in August of that year. Seventy-nine candidates appeared of whom sixty-four were successful. The close of Settlement operations leaves the district amply provided with qualified patwari candidates.

79. Trijunction pillars of brick or stone were constructed at the 1387 Settlement and had become very dilapidated. Many of them had disappeared altogether but their sites were always known. During the present Settlement they have been entirely replaced by stone monoliths three feet high and eighteen inches square which can only be moved with difficulty and ought to be imperishable. The cost was about seven rupees per stone and as the expense of a pillar is shared by three villages the burden on each village was inconsiderable. This is a work which does not bulk largely in Settlement directions or reports but it gives an enormous amount of trouble. My staff had to deal not only with the internal village boundaries throughout five Tahsils but also with four districts (one in another Province) and four different States. The common boundary of Ambala and Patiala cannot be less than one hundred and forty miles in length. The advances drawn from the Treasury amounted to Rs. 27,000 and financial adjustments alone demanded much care and time.

80. The Kharar Neli circle is heavily irrigated by *kuls* (ducts) from the Ghaggar River which also serve to work a number of *gharats* (water-mills) for grinding flour ; the *kuls* have been notified under the Minor Canals Act. The assess-

ment of these mills is a legacy from the Mani Majra Raj which lapsed in the year 1875. By the rough and ready method in force since 1887 an annual charge of Re. 1-4-0 per cubit of head of water driving the turbines was imposed on each mill. This system though assessing the power omitted to take into account either the number of mill-stones or the situation of the mill. It is evident that mills easy of access will get more custom than those further away, also that mills containing two or more stones will grind more flour than those with only one. I accordingly divided the mills into two classes according to situation and proposed an assessment governed by a scheme of simple rules and based on the head of water multiplied by the number of stones. The result was the imposition of an annual sum of Rs. 806 on 84 mills (old assessment Rs. 575).

81. In the Morni Hill Tract of the Naraingarh Tahsil there is an assessment on *harrar* trees (*terminalia chebula*). *Harrar* trees. These trees produce myrabolans, a valuable astringent substance. The Government orders on Mr. J. G. Beazley's Morni Assessment Report, 1919, contemplated an enhancement by 50 per cent. of the lump assessment in Bhoj Naggal and the extension of the *harrar* assessment to Bhoj Mataur. The old lump demand in Bhoj Naggal was Rs. 329, and this plus an increment of 50 per cent. is Rs. 493. Mr. Beazley estimated that a *harrar* assessment in Bhoj Mataur would realise about Rs. 50. The existing assessment was in force in Bhoj Naggal only and was imposed at the rate of 2½ annas per tree on the trees growing in cultivated land. In Mauza Hatiya the trees are specially good and the rate was 4 annas per tree. There was also a lump demand on trees growing in the jungle. Apparently the assessment was imposed and collected in a rough and ready manner and there had never been any regular tree census. The entire Morni Hill Tract is in the *jagir* of the Mir of Kotaha. It is divided into 14 *bhojes* and there is one so-called *karkun* in every *bhoj* except Bhoj Naggal and Bhoj Mataur each of which has two, so the total number of *karkuns* is 16. They are *lambardars* for the purposes of the Land Revenue Act. The 14 *bhojes* contain 172 tiny hamlets and the actual collection of the revenue is done by the headmen of the hamlets who pay it to the *karkuns* less 2 per cent. which deduction is a concession on the part of the Mir of Kotaha. The *karkuns* in their turn pay the revenue into the tahsil and are remunerated by the usual 5 per cent. *pachotra* cess. These payments of 2 and 5 per cent. were not granted in the case of *harrar* revenue.

The new arrangements as sanctioned by Government are as follows :—

The assessment shall be at the rate of 4 annas per tree on all fruit bearing *harrar* trees in cultivated land throughout Bhoj Naggal and Bhoj Mataur with a special rate of 5 annas per cultivated tree in Mauza Hatiya, Bhoj Naggal. The rate per jungle tree shall be 3 annas throughout. The result according to the recent tree census will be—

			Rs.
Bhoj Naggal—1,271 cultivated trees at annas 4	...	...	318
689 jungle trees at annas 3	...	...	129
92 cultivated trees in Mauza Hatiya at annas 5	...	...	29
			<hr/> 476
Bhoj Mataur—85 cultivated trees at annas 4	...	...	21
320 jungle trees at annas 3	...	...	60
			<hr/> 81

The total demand is Rs. 557 as against Mr. Beazley's estimate of Rs. 493 + Rs. 50 = Rs. 543.

There shall be a periodical census of fruit-bearing trees and adjustment of the demand. The census shall be held every eight years, that is to say, at each alternate quadrennial *jamabandi* attestation.

The collection of *harrar* revenue shall be remunerated on the same footing as the ordinary land revenue, that is to say, the headmen of hamlets shall pay in the collections less a 2 per cent. deduction and the *karkuns* shall receive the 5 per cent. *pachotra* cess upon the sums so realised.

82. The following came to this Settlement for training from the Punjab, North-West Frontier Province, Delhi Province, and the Kashmir, Alwar, Bahawalpur, Patiala, Jind, Nabha, Maler Kotla and Bilaspur States :—

Training.

- One Assistant Commissioner.
- Seven probationary Extra Assistant Commissioners.
- Eight probationary Munsiffs.
- Five Tahsildar candidates.
- Eleven Naib-Tahsildar candidates.
- Seven kanungo candidates.
- Five patwaris from Jind.
- One probationary Wazir-i-Wizarat from Kashmir.
- One probationary Revenue Officer from Jind.

83. I hope to leave the manuscript of the new Ambala District Gazetteer with the Deputy Commissioner before I go on leave.

Gazetteer and Riwaj-i-'Am.

The Riwaj-i-'Am has been revised and amplified. The original enquiries were made by Malik Muhammad Hayat Khan, Nun, Extra Assistant Settlement Officer, and the Settlement Tahsildars, and the replies were attested by myself in the Rupar Tahsil and by the Extra Assistant Settlement Officer in the remaining four tahsils.

84. Cesses amount to Rs. 11-6-8 per cent. on the land revenue (lambardari Rs. 5 per cent., local rate Rs. 10-6-8). The rate should remain unchanged unless there is necessity to the contrary. It is not levied on the *harrar* tree assessment in the Morni Hill Tract, paragraph 81.

Cesses.

85. The district is fully developed and comparatively fully assessed. The term of Settlement should be thirty years.

Term of Settlement.

86. The cost of Settlement was estimated in the Forecast Report at Rs. 5,11,269. The entire actual expenditure has been Rs. 4,62,164 and of this sum *jagirdars* will pay Rs. 39,766. Thus the net cost to Government has been Rs. 422,398.

Cost of Settlement.

87. Mr. H. M. Cowan came as Assistant Settlement Officer in October 1916. He unfortunately had to leave a year later owing to illness. I am much indebted to him for his thorough and painstaking supervision of the measurement and record work. He was succeeded by Mr. J. G. Beazley, who was prematurely transferred in less than eight months after his arrival. He had to write his Assessment Reports at a considerable disadvantage and the satisfactory result is due to sheer ability and industry. The Settlement commenced under the happiest auspices and work proceeded right through without a hitch. For this I am indebted to the industry and good will of the entire Settlement Staff. Malik Muhammad Hayat Khan, Nun, was the Extra Assistant Settlement Officer from the beginning till the summer of 1919 when he left to become a Deputy Commissioner. There was no room for intrigue under him and his work was marked by zeal, sympathy and impartiality. Being himself a large landlord he had a practical insight into the problems which constantly cropped up and I could implicitly rely on the disinterested nature of his advice. The Malik's successor, Shaikh Nur Muhammad, had already earned my full appreciation by the energy and interest which he showed throughout his special training in this Settlement in the year 1918. He returned a year later as Extra Assistant Settlement Officer and has given me great help in the concluding tasks of Settlement. I next think of my two Settlement Tahsildars in the Rupar Sub-Division and of the Head Clerk and Reader. All four had exceptional experience and qualifications. Munshi Sher Ali Khan, Tahsildar of Kharar, was already an accepted candidate for the post of Extra Assistant Commissioner and is now a Revenue Assistant. I am glad to say that Munshi Dhian Singh, Tahsildar of Rupar, was accepted as a candidate on my recommendation. The Head Clerk, Bawa Sant Singh, has an excellent record and is

Notice of Officers.

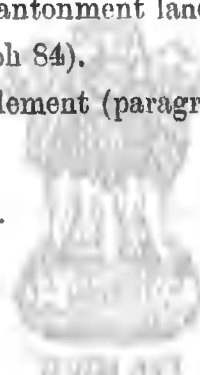
now Head Vernacular Clerk, Ambala. My Reader, Lala Sundar Das, worked exceptionally hard and well. The three remaining Tahsildars—Shaikh Ezad Bakhsh, Ambala; Maulvi Muhammad Sami, Naraingarh; Pandit Chattar Bhuj, Jagadhri—all worked well and gave both myself and the Assistant Settlement Officers full satisfaction. Where all did their best it is a difficult task to single out names. Of the Naib-Tahsildars I will just mention Agha Sher Ahmad Khan, Saiyad Mahmud Husain (afterwards Settlement Tahsildar) and Chaudhri Muhammad Khan. The kanungos and patwaris worked well and loyally and I did all I could to secure recognition of ability and industry. The Ambala Settlement was lucky in the amount of promotion that has gone to members of the Settlement Staff in all grades while the Settlement was actually proceeding. I have at least twenty-eight names of those who have already received special promotion of various kinds. The District Staff was also associated in Settlement work and rendered considerable assistance. Lala Pars Ram, Sadr Kanungo, deserves special mention. A special Commissioner's Darbar was held on April 23rd, 1920, at which 63 sanads and cash rewards amounting to Rs. 950 were distributed.

88. Orders are required on the following points:—

- (i) The system of *jagir* accounts, collections and reporting births and deaths (paragraph 67).
- (ii) The perpetual pensions which are being disbursed in payment for the Ambala Cantonment land (paragraph 73).
- (iii) Cesses (paragraph 84).
- (iv) The term of Settlement (paragraph 85).

R. B. WHITEHEAD,
Settlement Officer.

The 5th September 1920.



APPENDICES AND GLOSSARY.



APPENDIX I.

General Statement of Resources and Revenue Demand.

[illegible]

APPENDIX I—concl'd.

General Statement of Resources and Revenue Demand—concluded.

1	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Tahsil.	ACREAGE OF CROPS (AVERAGE OF SELECTED YEARS).										INCIDENCE.										
	KHARIF.										REVENUE.										
	RAH.					ANNUAL.					PERCENTAGE OF CULTIVATED AREA NOT-GAGED.					PERCENTAGE OF INCREASE					
	Matured.	Failed with percentage on sown.	Sown.	Matured.	Failed with percentage on sown.	Sown.	Matured.	Failed with percentage on sown.	Sown.	Estimated value of grain and straw.	Estimated half net assessment.	To agriculturists.	To others.	Total.	Old demand.	Final new demand.	Percentage of half net assessment	Percentage of increase	Per acre cultivated.	Per acre matured.	Per head of population.
Kupar	64,980	7,770	72,700	60,721	8,764	69,465	125,651	16,534	142,185	23,22,652	5,77,000	9	3	12	2,31,796	2,91,732	51	27	2 7 5	2 5 6	2 11 5
Kharar	80,883	9,501	90,384	75,480	12,791	88,271	156,318	22,292	178,605	27,78,061	7,27,950	8	4	12	2,55,886	3,39,544	47	33	2 3 10	2 1 9	2 8 9
Ambala	77,171	20,565	97,736	82,799	21,319	104,119	159,970	11,984	201,864	27,23,730	5,08,600	10	6	16	2,34,149	2,91,396	51	24	1 11 10	1 13 2	2 1 0
Naraingarh	67,628	11,067	79,295	60,110	12,236	72,346	127,738	23,903	151,641	20,29,435	4,27,300	7	10	17	1,80,955	2,24,335	53	24	1 11 7	1 12 1	2 1 11
Morni	3,374	...	3,940	2,156	1,010	3,165	5,529	1,576	7,105	73,995	15,580	4	4	8	7,970	8,803	57	10	1 12 6	1 9 6	1 5 4
Jagadhari	77,877	19,053	96,930	78,031	14,425	92,456	1,55,908	33,478	149,386	29,30,706	5,89,400	7	7	14	2,36,811	3,04,750	52	29	1 14 1	1 15 3	2 2 9
Total	371,813	69,122	440,935	359,296	70,545	429,841	7,31,109	139,667	870,776	1,29,28,562	29,65,830	3	6	14	11,47,547	14,63,560	50	28	1 15 10	2 0 0	2 4 10
Add Ambala Cantonment (not assessed.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kalehar forest (not assessed.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

APPENDIX II.

TOTAL COST OF RE-ASSESSMENT UNDER ALL HEADS.

Serial No.	Budget Head.	Total expenditure.
		Rs.
	Salary and Settlement allowance of gazetted officers ...	1,58,058
	<i>A.—Office Establishment.</i>	
1	Office Kanungos ...	14,700
2	Mapper ...	1,543
3	Menial establishment ...	22,823
	Total Office establishment ...	38,575
	<i>B.—Field Establishment.</i>	
4	Settlement Tahsildars ..	25,990
5	Settlement Naib-Tahsildars ...	46,205
6	Field Kanungos, including field allowance ...	65,549
	Total field establishment ...	1,37,744
7	Temporary establishment ...	22,481
8	Settlement allowance to District Patwaris ...	12,885
	Total ...	35,366
9	Travelling allowance of officers...	5,288
10	Travelling allowance of establishment ...	21,538
	Total ...	26,826
	Total pay and allowances of establishment ..	2,38,511
11	Contingent expenditure, except stationery and lithography	44,088
12	Stationery ...	20,749
13	Lithography ...	758
	Total contingent expenditure ...	65,595
	GRAND TOTAL ...	4,62,164

APPENDIX III.

Di-alluvion Rules.

PART A.

The following rules apply to the villages specified in the register which has been prepared whose lands are at present exposed to the action of the Sutlej River and Sarsa Nadi in Rupar Tahsil and the Jamna River in Jagadhri Tahsil, such action including sand drift due to the said rivers and nadi. They may be extended by the Collector's orders to any village not specified which may subsequently become exposed to river action. In these Rules the words river action include 'nadi action.'

2. (a) When cultivated land assessed as such at Settlement, or subsequently under these rules, is carried away or rendered unfit for cultivation or grazing by river action or land similarly assessed as pasture is carried away or rendered unfit for grazing, the assessment thereon shall be remitted.

(b) When the quality of land which has been assessed at Settlement or subsequently to Settlement at the higher rate prescribed in rule 8 is found to have deteriorated owing to the action of the river, the assessment thereon may be reduced to the lower rate prescribed in rule 8.

3. If any land which may be assessed under these rules remain uncultivated for two successive years, and a Revenue Officer not below the rank of Naib-Tahsildar has satisfied himself after inspection that it has remained uncultivated owing to deterioration, it may be presumed that it has been rendered unfit for cultivation by river action, and the revenue on it may be totally remitted. But if it still remain culturable waste fit for grazing, it should be assessed as such under rule 10.

4. (a) Uncultivated land improved by river action since Settlement, which subsequently becomes cultivated,

(b) land of which the assessment has been remitted under rules 2 and 3, and which is subsequently recultivated, shall on first cultivation be classified as superior or inferior, and assessed as such at the rates specified in rule 8, according as superior or inferior crops as specified in rule 7 are grown on it, provided that land which on first cultivation—

- (i) produces less than a four-anna yield of superior or inferior crops shall not be assessed at all ;
- (ii) produces a superior crop and gives more than four annas but less than an eight-anna yield, shall be classed as inferior ;
- (iii) produces an inferior crop and gives more than four annas but less than an eight-anna yield shall be assessed at half inferior crop rates ;
- (iv) produces crops with yields of eight annas and over, shall be assessed at the full rates, superior or inferior, as the case may be.

5. Land classified and assessed at the inferior rate, or on which the assessment has been reduced under rule 2 (b), shall be classified as superior and assessed accordingly as soon as it bears a superior crop the produce of which is not less than eight annas.

6. The classification of land for assessment purposes under these rules should not be too minute. If a survey number is not very large (not more than 2 bighas) it will usually be best to include the whole in one class, even though the same class of crop may not be grown in the whole of it. The classification should be that for the land bearing the crop which covers the largest portion of the area. The same rule applies to mixed crops.

7. Land bearing cane, maize, tobacco, hemp, chillies, wheat and mixtures of wheat, cotton, or any two crops in a single year, shall be classed as superior, and assessed at the superior rate. Land bearing all other crops shall be classed as inferior and assessed at the inferior rate.

8. The superior class rate is as follows :—

Rates of assessment.

Circle.	Per acre.			Per bigha.		
	Rs.	A.	P.	Rs.	A.	P.
Rupar Bet ...	2	2	0	0	7	1
Rupar Ghar Bet ...	1	12	0	0	5	10
Southern Jumna Khadar ...	1	10	0	0	5	5
Northern Jumna Khadar ...	1	4	0	0	4	2

The inferior class rate is Re. 1 per acre throughout, or Re. 0-3-4 per bigha.

(9) In calculating the revenue areas less than six biswas should be neglected. From six biswas to fourteen biswas shall be reckoned half a bigha and fifteen biswas and over the equivalent of one bigha.

(10) When by river action new culturable waste is formed, or land previously assessed as cultivated, becomes waste fit for grazing, see rule 3, one anna per acre should be imposed, omitting small isolated plots of banjar of less than 40 bighas in extent.

PART B.

1. In villages throughout the District liable to be affected by the hill torrents known as nadis or chos, such action including sand drift due to the said nadis or chos, remissions of, or additions to, revenue on account of diluvion, and alluvion, respectively, will be made under the following rules.

2. Ordinarily the measurements in order to ascertain the affected areas will be made in the year of quadrennial attestation; but when in any estate changes of sufficient magnitude have occurred in the estate as a whole or in individual holdings, measurements may be ordered by the Collector in any other year. At the end of the Kharif Girdawari, the Tahsildar will submit to the Collector a list of the estates not coming under quadrennial attestation, in which such measurements appear to be necessary, together with a rough estimate of the amount of the cultivated area affected, and the Collector will return the list with his orders thereon.

3. (a) When by the action of torrents (nadis or chos) cultivated land assessed as such at Settlement or subsequently under these rules, is carried away or rendered unfit for cultivation or grazing the assessment thereon shall be remitted.

(b) When by such torrent action the quality of land assessed as cultivated is found to have deteriorated, the assessment may be reduced to one half according to the amount of deterioration.

(4) (a) When land which was unculturable at Settlement, or on which the assessment has been subsequently remitted under rule 3 (a) becomes cultivated in consequence of torrent action, it will be assessed at the rates specified in rule 5, provided that in cases where the favourable action of a torrent is mainly due to the erection of *bunds* or the planting or preservation of grass, bushes or trees, such land shall, from the date at which it might otherwise first have been assessed under these rules, remain free from any assessment which might from time to time have been imposed, for a period of 4, 8 or 12 years, as may be determined by the Collector after due consideration of the extent of the work and the cost involved.

(b) Land of which the assessment has been reduced under rule 3 (b), or which has been assessed at reduced rates under rule 5, may subsequently be assessed at the full rates specified in the latter rule whenever the Revenue Officers concerned think this course proper in consequence of improvement due to torrent action.

5. In dealing with cases of enhancement or remission of revenue referred to in the above rules, the assessing officer shall adhere strictly to the village rates fixed at Settlement, that is to say:—

(a) If the revenue has been distributed by shares or by an all-round rate on cultivation, the all-round rate on cultivation shall be applied, except that bad land may be assessed at half rates;

(b) If the revenue has been distributed by soil rates such rates only shall be applied but as in the previous case, bad land may be assessed at half rates.

(c) Land assessed at half rates will be raised to full rates when the authorities think right.

6. In calculating the revenue areas less than six biswas should be neglected. From six biswas to fourteen biswas shall be reckoned half a bigha, and fifteen biswas and over the equivalent of one bigha.

Procedure.

(1) During the Kharif Girdawari, the patwari shall distinguish fields which have been newly cultivated (*nautor*), or which have been affected for the better and have to be assessed at a higher rate than before, by a red ink mark in the Khasra Girdawari, and shall carefully estimate and record the crops on such lands in the appropriate columns. The field kanungo shall visit all such fields and check the girdawari entries. No enquiry should be made under these rules, nor should the revenue of any estate be changed unless the revenue to be reduced on account of diluvion or added on account of alluvion is not less than eight annas on some one proprietary holding and for the whole estate not less than one per cent. of its existing assessment. Work should be started as soon as possible after the 15th November in each year, and completed by the end of January following.

(2) The changes caused by river or torrent action should be shown both in the patwari's own di-alluvion tracing, and in the tracing to be filed with the Government copy of the di-alluvion file. The former tracing should be prepared from the village map on unbacked mapping sheets, and cover the whole of the village or the part liable to be affected by di-alluvion changes, and should continue to be used till a fresh tracing is prepared under rule 4 (b). The tracing to be filed with the Government copy of the di-alluvion file will be on unbacked mapping sheets of suitable size, and will be prepared afresh on each occasion. It will re-produce only the changes of the particular year for which it has been prepared, but in order that there may remain no doubt as to the position of any new fields, the fields which touch them should be shown.

(3) The patwari's copy of the di-alluvion tracing shall show the edge of the river or torrent, as well as any new fields formed as the result of di-alluvion changes. The line representing the edge of the river or torrent should be blue, and at both ends of it the year in which the measurements were made should be noted. The position of the edge should be fixed by measuring the remaining sides of the fields which are partly under the river or torrent, and the position of the new fields with reference to the old fields out of which they have been formed, but if this method be not practicable, then the squares covering the affected part of the village must be relaid and linked up with the base lines on either side, and off-sets taken from them. When the assessment has been made, the fields assessed at the inferior rates will be marked off by lines of green dots. The dots will be run together into a continuous green line, when the superior rate has been imposed.

(4) The procedure for the correction of field maps will be applied without any modification to the portions of di-alluvion villages beyond the reach of the river or torrent action, but as regards areas subject to such action the procedure will be modified as follows :—

- (a) *Tatimma shajras* will be prepared only for changes other than those due to di-alluvion. Changes due to di-alluvion will be shown from year to year in the di-alluvion tracings prescribed in rules 2 and 3.
 - (b) At the end of every fourth year when a special attestation is carried out, a fresh tracing of the portion of the village subject to river or torrent action will be prepared and all new fields whether formed in consequence of di-alluvion or other changes, and whether shown in the old di-alluvion tracing or separate *tatimma shajras*, will be incorporated therein. This tracing will be prepared in duplicate and one copy of it will be filed in the tahsil with the *jamabandi*, and the other retained by the patwari for use during the next four years. Both copies will be duly attested by the kanungo. The preparation of a fresh tracing may be ordered even before the quadrennial attestation if the old tracing cannot continue to be used without producing confusion.
 - (c) In the di-alluvion files new fields will be given temporary numbers, but all fields incorporated in the fresh tracing prepared under (b) will at the time of incorporation be numbered in accordance with the system laid down in paragraph 41, and duly entered in the field book prescribed in paragraph 42 of Standing Order No. 16. Fields shown in *tatimma shajras* will have been already numbered in accordance with the system.
- (5) It is not necessary that every new field should be given a new number. If a portion of a field is submerged and the ownership of that portion remain unaltered, a new sub-number should not be given thereto as the soil entry will show all that is necessary. Again, if any portions of an uncultivated plot are brought under cultivation, the use of sub-numbers should be avoided unless it is absolutely necessary for the purposes of *girdawari*.
- (6) As the measurements proceed, the patwari will prepare Form A, but the entries in columns 15 and 16 will remain in pencil till the Tahsildar has made his visit, and formed his opinion as to the assessment. He will also make in the register of fields previously assessed below full rates (Form C) the necessary entries relating to crops grown in the past year, or in the case of villages affected by torrents in all years since di-alluvion measurements were last made.
- (7) The kanungo will satisfy himself that the patwari has included in his maps and *khasra* all land which should be included, will test the measurements, and check the *khasra*.
- (8) As soon as the *khasra* has been checked by the kanungo, the patwari will prepare in duplicate in Form E a village abstract of changes due to river or torrent action. He will make in ink all the entries in columns 1 to 3, and also those giving the details of area and revenue for the previous year. The entries showing deductions and additions, and the area and revenue for the current year, will be made in pencil.
- (9) The Tahsildar and Naib-Tahsildar will test the map, etc., on the spot, and pass orders as to classes of land, rates and revenue, after inspecting the fields and examining the entries in the *khasra* and in Forms C and D. He will cause to be entered in ink in the *khasra* the class and rate for each field as determined by himself. He will at the same time make the patwari enter in Form C the rate against each field of which the class has been changed, and also all fields assessed for the first time below Settlement or full rates. He will also have an extract from Form C, showing those numbers only of which the assessment has been changed in the current year, put on the file. Form E will be completed by the patwari under the Tahsildar's directions. The Tahsildar will add a brief note to the file explaining the changes which have occurred and his assessment proposals. He will then sign the map, *khasra* extract from Form C, and abstract of area and revenue (Form E), taking over the extract and the Government copies of the other papers. He will also sign the register (Form C) which the patwari will retain in addition to his own copies of the other papers. Register D will contain all field numbers lying near the banks of a torrent or river or in them. Fields will be entered in the order of their *khasra* numbers leaving suitable spaces after each hundred for subsequent additions if necessary. As soon as the assessment has been made, this register will be completed by entering the changes against each field.
- (10) When the Revenue Officer, who is empowered to pass final orders on the assessment, disposes of the case, any corrections required in the papers will be made in the Govern-

ment copies, and the patwari will be ordered to correct his own copies. He will also prepare in duplicate a *khewat* showing the result of the new assessment (Form B), and forward both copies to the Tahsildar through the kanungo. The Tahsildar will see that the *khewat* agrees with the orders, and signing both copies will file one with the record and return the other to the patwari. The latter will embody the new figures in future *bachk* papers and will give free of charge a *fard* showing the result to each *khateedar* concerned.

(11) The whole file regarding changes of assessment due to river or torrent action will be prepared on Lucknow paper stitched at the back in book form. The tracing of maps will be placed in an envelope of the full size of the file, and will not be folded more than twice.

(12) These special rules are subject to the general rules on the subject contained in Standing Order No. 26.



APPENDIX IV.

A—Hill Denudation and Re-afforestation.

THE progressively increasing destruction of fertile land by the hill torrents or chos is primarily due to the denudation of the catchment areas, and the circumstances under which that reckless removal of trees and undergrowth was allowed to take place are described in paragraphs 726 to 730 of the Land Administration Manual. To an observer at Kasauli the contrast presented by the utterly desolate British Siwaliks of the Rupar and Kharar Tahsils as compared with the green portions of the same range which are reserved by the Patiala State is a striking object lesson. At the 1887 Settlement Mr. (now Sir A.) Kensington took a very gloomy view of the rapidly augmenting damage done by the chos, and by the wind blown sand along their banks, but was unable to indicate any remedy. The matter was taken up with characteristic energy by Mr. C. E. Gladstone, Deputy Commissioner (1890—93), who taught the zamindars to combat the mischief by planting thatching grass (*kharkana, bind pula*) along the sides of the torrents, and an astonishing degree of improvement was obtained in the Rupar Sub-division. The measures were not so successful in the three southern Tahsils where the people are singularly feeble and apathetic. Very little, if anything, has been done on these lines since Mr. Gladstone's time, and of course the *foens et origo* of the evil remained untouched. In the year 1911 Mr. L. B. Holland, Assistant Conservator of Forests, was deputed to conduct an enquiry into the condition of the Ambala Siwaliks between the Ghaggar and the Sutlej, and his printed report was submitted to Government under cover of Forest Conservator's endorsement No. 1458, dated 7th June 1912. The remedial measures suggested by Mr. Holland were much the same as those undertaken in the case of the Hoshiarpur chos, namely—(1) the prohibition of browsing; (2) the complete closure of a belt of 1½ to 2 miles wide along and on both sides of the crest of the Siwaliks; (3) the opening and closing to cattle grazing for two years at a time of alternate blocks below the said belt. The Conservator observed that deterioration had gone so far that he doubted of the possibility of any progress unless nature were assisted and he suggested for the closed belt the system of sowing in contour trenches which had proved successful in the Pabbi hills of the Gujrat District. Those familiar with the tract will thoroughly agree with this opinion. All vegetable mould has been washed away from the slopes of the hills and only survives in pockets and on the rarely occurring flat terraces; the slopes themselves are at present as barren as the mountains of the moon. The good soil which was washed down by the torrents used to benefit the plains to some extent, but the chos now carry nothing but vast quantities of sand and gravel and have become an unmitigated source of damage and destruction. The sudden and violent character of the floods is a sure indication of the complete denudation of the catchment areas, and the amount of damage done is obscured by the partial and inequitable use of the Di-alluvion Rules. It is plain that the most energetic measures are necessary to produce any real improvement within a reasonable period of time.

Mr. Holland was placed in charge of the operations throughout the length of the Siwalik range in Hoshiarpur and the Rupar Sub-division of the Ambala District, and was directed to assist the Deputy Commissioner of Ambala and the Sub-divisional Officer, Rupar, in demarcating areas and in framing the necessary notifications under the Chos Act. The restrictional measures advocated by him are described in a memorandum to the Deputy Commissioner, Ambala, dated 24th July 1914. Briefly he proposed to divide the hills into two tracts only, A and B say, A comprising the whole of the upper slopes, and B the lower slopes. Tract A was to be totally closed under section 5 of the Chos Act, and partial prohibition was to be applied to tract B under section 4 of the Act. Mr. Holland was opposed to rotational closure. Meanwhile on the 29th May 1914, Government sanction had been accorded to the entertainment of one forester and six forest guards in the Ambala Siwaliks for a period of five years only. The entire areas A and B were closed under section 4 of the Chos Act by virtue of Punjab Government Notification No. 458, dated 25th September 1914, and Mr. Holland proceeded to demarcate the inner area A to which Section 5 of the Act was to be applied,—see Printed Proceedings, Forest Department, February 1915, Nos. 52, 55 and 56. Government refused to pass orders on the proposal under section 5 of the Chos Act until further information was given, and a rough compensation estimate made.

An estimate of the cost of the measures towards the reboisement of the Rupar Sub-division Siwaliks is contained in letter No. 330, dated the 4th August 1915, from the Sub-divisional Officer, Rupar, to the Deputy Commissioner, Ambala, and was framed on the lines already adopted some years previously by Mr. P. J. Fagan in the Hoshiarpur District. The sums as estimated were :—

	Rs.
Cost of the operations under section 4 of the Chos Act ...	80,372
Cost of the proposed measures under section 5 of the Chos Act	1,27,757

Measures under section 4 of the Act had already been undertaken, and some twenty thousand sheep and goats had been expelled, but action under section 5 was postponed indefinitely owing to the financial stringency—letter No. 11-Forests, dated the 7th January 1916, from the Revenue Secretary to Government to the Junior Secretary to the Financial Commissioners. The actual cost of the section 4 operations was Rs. 82,508. In April 1916 Mr. Holland was transferred. It was pointed out at the time that it would be necessary later on to replace Mr. Holland by another officer when financial conditions

made it possible to take further measures for the afforestation of the Siwaliks—letter No. 140-Forests, dated 5th April 1916, from the Revenue Secretary to Government, to the Conservator of Forests. The primary reason for the transfer of Mr. Holland was the closing down of any really effective operations owing to the lack of funds. Since that time the Ambala Siwaliks have been nominally under the superintendence of the Katardhar Tahsildar at Hoshiarpur, but it is quite impracticable for one man to supervise one hundred and ten miles of Siwaliks especially as Rupar and Kharar are so highly inaccessible from Hoshiarpur. In reality the restricted area in the Rupar and Kharar Siwaliks has been at the mercy for the last two years of the forester and his six forest guards.

The Hon'ble Mr. P. J. Fagan, Financial Commissioner, toured through the Rupar Sub-division in October 1916, and recorded a note on the Siwalik afforestation operations. Though a period of only two years had elapsed since restrictions under section 4 of the Chos Act had been enforced Mr. Fagan was confident that there had been much improvement, and that the results were decidedly encouraging. There was of course no soil improvement as yet in the direction of the formation of vegetable mould, but a beginning had been made, and the results clearly indicated that operations under the Chos Act should be prosecuted diligently and developed. In the plains nothing of any importance had been done to reclaim cho-beds, but there would be plenty of scope for action as the area in which reclamation can and should be undertaken is extensive.

As regards present proposals, it is essential that Mr. Holland's scheme for the Rupar Sub-division should be completed. This involves the issue of the Notification under section 5 of the Chos Act as originally contemplated, the payment of compensation, and the prohibition of camel grazing throughout the section 4 area as has already been done in Hoshiarpur. The section 5 area should be completely closed to all rights with the possible exception of the annual cutting of grass after the seeds have fallen, and the cultivated land in the cho-beds inside the section 5 area should be taken up. Half measures only give rise to trouble and friction later on. As a corollary to these measures, the co-operation of the Patiala and Nalagarh States will be necessary along the Siwalik ridge. Then also operations should be commenced in and along the cho-beds in the plains. It is advisable to begin with something quite definite and the Settlement Officer informs me that there are bare sand dunes within the village boundaries of Sahaoran and Chaparcheri, while the area to the south of Kharar town contains bad patches of sand and alkali. I propose to have these planted in the rains of 1919.

Reclamation and conservation measures are just as urgently required in the plains and lower hills of the Naraingarh and Jagadhri Tahsils, and in the plains of the Ambala Tahsil, perhaps the need is even greater because of the feckless character of the people. The state of things is about as bad as it can be, and is briefly described in the new Assessment Reports. The Tangri Nadi is about the most unstable and destructive cho in the district, and has its catchment area in the Morni Hills which are in the jagir of the Mir of Kotaha, Naraingarh Tahsil. The Mir's estate is now under the administration of the Court of Wards. The lower slopes of the Morni hills are in the last stages of denudation, and the eradication of plant growth has been followed in places by extensive land slips which have laid bare the solid rock underneath. There was a proposal at last Settlement to make the Morni tract a reserved jungle, but it unfortunately fell through. Most of the lower hills in British territory between the Ghaggar and the Jumna are in much the same condition, and provide a sorry contrast with the reserved forests of the Kalsia and Nahan States. I may take the specific case of the Nagli Khol in the Jagadhri Tahsil; the torrent emerging from it is the Boli Nadi which is trained across the Western Jumna Canal at Dadupur. A quarter of a century ago Mr. R. J. Pinder, Deputy Conservator of Forests, described the very bad state of the Nagli Khol, and vigorously advocated the adoption of protective measures, but nothing has been done.

A special feature of an extensive tract in the Naraingarh Tahsil is the prevalence of ravine-cutting, locally known as darrar. Heavy rain falling on slopes washes away the surface soil and leaves an absolutely barren expanse of gravel and clay. The numerous tiny streams unite to form large ones which eat their way into the surface and produce a wilderness of steep dikes and ravines. An effective remedy would be the construction of small stone walls across the shallow water-courses which would hold up the silt while allowing the water to percolate through. In this way the ravines would gradually fill themselves up, and the loss of fertile silt would be prevented. This plan would not be successful unless carried out systematically on a large scale, and the people are too feeble to start it themselves. The usual grass planting is of course indicated along the torrent beds and on the sand hills throughout the three southern tahsils.

I have already touched on the inadequacy of the supervision in the Rupar and Kharar Siwaliks. Adequate supervision is a fundamental condition of success, and I earnestly advocate that proper arrangements be made from this point of view. Probably one forester and six forest guards are a sufficient subordinate staff for the Rupar Sub-division Siwaliks, but it is essential that they should be properly supervised, and there is ample work for a whole time official of the standing of a Naib-Tahsildar. Kharar town is in a central position and is a suitable headquarters. The Naib-Tahsildar's first duty would be the preparation of the compensation statement under section 5 of the Chos Act. He would be placed in charge of the conservation and reclamation operations in both hills and plains, including sowing and planting, and his efforts would be controlled and directed by occasional inspections on the part of an expert from the Forest Department. He would be required to tour twenty-five days in

the month, and would submit a monthly diary to the Deputy Commissioner through the Sub-Divisional Officer, Rupar. Similarly operations in the three southern tahsils would be placed under a Naib-Tahsildar with headquarters at Naraingarh say.

Orders are solicited on the following matters:—

(1) The completion of the original project for the conservation and reboisement of the Rupar and Kharar Siwaliks, and as a corollary the appointment of a suitable whole-time official to be in charge of the operations both in the hills and in the plains of the Rupar Sub-Division.

(2) The securing from the Patiala and Nalagarh States of suitable co-operation in those parts of the Siwaliks belonging to them.

(3) The commencement of similar operations in the hills and plains of the Naraingarh, Jagadhri and Ambala Tahsils. The deputation of an officer from the Forest Department would be necessary for one cold weather in order to prepare the preliminary report. Useful documents would be the joint report, dated October, 1888, of Messrs. Down and Kensington on the proposals for forest reservation in the Morni Hill Tract and Mr. Pinder's report on the Nagli Khol. It would be as well for him to make a careful examination of the conditions prevailing in the large darrar areas in the plains portion of the Naraingarh Tahsil.

B—Note on a scheme for bringing irrigation water from the river Ghaggar to Ambala.

A CONVERSATION took place between Mr. E. It. Foy, Superintending Engineer, and myself on this subject in November 1919. According to an agreement between the British Government and the Phulkian States, dated 18th February 1873,—see Sirhind Canal completion report—the Patiala State will “allow the British Government, if it desires to do so, to take a small water-course from the Ghaggar to supply the cantonment and town of Ambala, the water-course to carry about 20 cubic feet per second.”

A suitable take-off for such a water-course would be in the neighbourhood of Ghaggar Station, East Indian Railway. The water-course would presumably be lined. The expenditure on this account would be considerable and it is doubtful whether it would be worth while for this small quantity of water especially as probably even this amount of water would not be available all the year round. The only suggestion that I could make for augmenting this supply was to buy out the vested interests of the land-owners in the Neli Circle, Kharar Tahsil, to the water which they now use. I invite a reference to paragraph 56 of my Kharar Tahsil Assessment Report, 1917. The 7,407 acres of recorded abi land would become barani, and this barani being inferior clay soil could probably not be assessed at a higher rate than the barani soil in the neighbouring Dakar circle,—see paragraph 53 *ibid*—so in addition to the cost of vested interests Government would lose 7,407 multiplied by Re. 1-2-0 or Rs. 8,383 per annum on account of reduction of land revenue. Mr. Foy estimates that in this way we might get another 20 or 30 cusecs, and that the total amount of water would be 40 or 50 cusecs. The following preliminary work seems to be indicated:—

(1) The views of the Patiala State are required.

(2) A thorough preliminary enquiry is advisable into the actual needs of the cantonment and city for irrigation, watering the roads and domestic purposes apart from drinking. I am assuming that the Ghaggar water would be suitable and would be used for every purpose but drinking.

APPENDIX V.

Rules for the remission or imposition of nahri-parta on land from which canal irrigation has been withdrawn or to which it has been extended.

ASSESSMENT RULES.

I.—Alterations in the land revenue demand assessed on lands irrigated from the Western Jamna Canal will be made in accordance with changes in soil classification made in the year in which the quadrennial attestation of the *jamabandi* takes place.

II.—Changes in soil classification will be made in accordance with the rule described in paragraph 5 of Appendix XX of the Settlement Manual.

Provided that if any part of a field has been converted from *barani* to *nahri* or *vice versa* no change of classification shall take place if the area affected is less than one acre.

III.—Alterations in the assessment will take effect from the Kharif harvest following the attestation of the *jamabandi*.

IV.—When an outlet is closed the *nahri-parta* on all land of which the classification has in consequence been altered from *nahri* to *barani* shall be remitted.
Closure of outlet.

V.—When a new outlet is opened, the *nahri-parta* shall be imposed on all *barani* land re-classified as *nahri*.
Opening of a new outlet.

VI.—When the position of an existing outlet is so altered as to cause, in the opinion of the Collector, an appreciable alteration of the area benefited by canal irrigation the alteration shall be treated as the closing of an old and the opening of a new outlet.
Altered position of an outlet.

VII.—When the size of an existing outlet is altered the *nahri-parta* shall be imposed on all increases and remitted on all decreases of *nahri* land.
Altered size of an outlet.

NOTE.—This rule applies also to change in the shares on which two or more villages enjoy irrigation from a joint outlet.

VIII.—The *nahri-parta* to be applied to increases or decreases of recorded *nahri* area shall be the rate prescribed for the assessment circle in which the village is situated.
Rates of *nahri-parta*.

PROCEDURE RULES.

I.—As soon as the *Rabi gird-wari* preceding the attestation of the *jamabandi* is complete the patwari will proceed to prepare from his *khasra girdawari* a list showing fields converted from *nahri* to *barani* and *vice versa* in consequence of the closure of old, opening of new or alteration of existing outlets. The field kanungo shall see that the list of fields is in accordance with these rules and shall sign it. The changes noted in the lists shall be incorporated in the *jamabandi* and the field kanungo shall carefully check the entries and the totals of *nahri* and *barani* entered at the end of the *jamabandi* and shall attest them with his signature.

II.—On completion of the soil classification the patwari will forward the list to the field kanungo. After it has been checked and signed by the latter it will be forwarded to the Tahsildar under whose signature a copy of the abstract with detailed statements will be forwarded by the Tahsildar to the Collector so as to reach his office not later than July 31st.

III.—After the statements have been checked in his office the Collector shall report the amount of the assessment to be imposed and to be reduced through the Commissioner for the sanction of the Financial Commissioner and shall inform the Executive Engineer of the proposal, sending him at the same time the abstracts for information and return. On receipt of sanction he will return the detailed statements to the Tahsildar, ordering him to have the addition to or the reduction from the assessment incorporated in the Kharif *baohh*.

IV.—In incorporating the changes due to addition or reduction of assessment in the *baohh* the patwari shall, whether the assessment on *nahri* and *barani* is distributed at an all-round rate or by differential soil rates, impose or reduce the *nahri* rate on or from the holdings affected.

List of Fields converted from barani to nahri and vice versa with additional nahri assessment.

Patwari Circle _____

Tahsil _____

For the year 192 _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Serial No.	Topographical No.	Name of village.	Name or No. of outlet.	Number of jamabandi holdings.	Name of owner, with description (briefly.)	Name of cultivator with description (briefly.)	FIELD NO. AND AREA CONVERTED.				NAHRI ASSESSMENT.			NET INCREASE OR DECREASE OF NAHRI ASSESSMENT.					BRYAKKS.
							From barani to nahri.		From nahri to barani.		Rate.	To be imposed.	To be reduced.	Plus or minus.	Land revenue.	(Less).	Total.		
							Field No.	Area.	Field No.	Area.									

NOTES.—Columns 8 and 10.—If part of a field is affected the word “*min*” should be added.
 — Columns 9 or 11.—In total of the village acres should also be noted in red ink.
 Column 12.—For rates see Jagadhari Tahsil Assessment Report.
 Column 13, 14, 16 and 18.—Detail of *munafi*, if any, should be noted in red ink.

Abstract showing nahri assessment payable on account of extensions of Canal Irrigation or remissible on account of reduction of the same in
Tahsil _____ District _____ for the year 192

1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Serial No.	Topographical No.	Name of village.	Name or No. of outle.	ADDITIONAL NAHRI ASSESSMENT TO BE IMPOSED.			NAHRI ASSESSMENT TO BE REDUCED.			AMOUNT ON LAND REVENUE PAYABLE BY THE VILLAGE FROM KHARIF 192 .				REMARKS.
				Area in acres converted from barani to nahri.	Rate.	Land revenue.	Area in acres converted from nahri to barani.	Land revenue at rates given in columns 10-12.	Land Revenue.					
									Khasia.	Mush.	Cesses.	Total.		

APPENDIX VI.

Principal Gazette Notifications.

No.	Date.	Subject.
78	18th June 1915	Under section 49 (1) of the Punjab Land Revenue Act of 1887 notifies that, with the sanction of the Governor-General in Council, a general re-assessment of the Land Revenue of the Ambala District is about to be undertaken.
79	Ditto	Under section 32 of the Punjab Land Revenue Act of 1887 notifies that the record-of-rights of the estates in the Ambala District shall be specially revised.
3658-S.-Gaz.	24th September 1915	Appoints Malik Muhammad Hayat Khan as Officiating Settlement Officer, Ambala.
428	23rd June 1916	Confers all the powers of an Assistant Collector, 2nd grade, upon Diwan Feroz Chand of the Kashmir State under settlement training in the Ambala District.
726	28th November 1916	Confers all the powers of an Assistant Collector, 2nd grade, upon M. Shiv Dyal, Murari Lal of the Alwar State, and M. Sunder Singh of North-West Frontier Province under settlement training in the Ambala District.
813	27th December 1916	Confers all the powers of an Assistant Collector, 2nd grade, upon M. Wazir Ali Khan of the Bahawalpur State and M. Imdad Ali Khan of the Maler Kotla State and M. Muhammad Hanif and M. Bahadur Ali Khan of North-West Frontier Province under settlement training in the Ambala District.
3612-R.	21st February 1917	Confers all the powers of an Assistant Collector, 2nd grade, upon Lala Kishan Lal of the Jind State under settlement training in the Ambala District.
12487-G.	26th May 1917	Appoints M. Sher Ali Khan, Extra Assistant Settlement Officer, Magistrate, 1st class.
12488-G.	Ditto	Appoints M. Sher Ali Khan, Extra Assistant Settlement Officer, Munsiff, 1st class.
12489-G.	Ditto	M. Sher Ali Khan is empowered to perform the duties of a Collector under sections 25, 26, 28 and 32 of Act II of 1886.
12490-G.	Ditto	M. Sher Ali Khan is empowered to perform the duties of a Collector under the Land Acquisition Act, I of 1894.
12491-G.	Ditto	M. Sher Ali Khan is empowered to determine the suits mentioned in first group in sub-section (3) of section 77 of Act XVI of 1887.

No.	Date.	Subject.
15765-R. ...	7th August 1917	Confers all the powers of an Assistant Collector, 2nd grade, upon B. Beant Singh, Tahsildar candidate, under settlement training in the Ambala District.
20440-A. ...	6th November 1917	Confers powers of a Magistrate, 1st class, upon Mr. J. G. Beazley, Assistant Settlement Officer.
20440-B. ...	Ditto	Confers powers of a Collector upon Mr. J. G. Beazley, Assistant Settlement Officer, under Land Revenue Act and Tenancy Act.
8700-G. ...	16th April 1918 ...	Confers all the powers of an Assistant Collector, 2nd grade, upon M. Mahanbir Chand, Tahsildar candidate, under settlement training in the Ambala District.
15178-C.G. ...	10th August 1918 ...	Empowers Malik Muhammad Hayat Khan, Officiating Settlement Officer, with all the powers of a Collector under the Land Revenue and Punjab Tenancy Act of 1887.
15832 (Rev. A.—R.)	14th August 1918 ...	Ambala City is consolidated as a separate estate.
17061-A-Gaz. ...	23rd September 1918	Appoints Malik Muhammad Hayat Khan, Extra Assistant Settlement Officer, Magistrate, 1st class.
17061-B-Gaz. ...	23rd September 1918	Appoints Malik Muhammad Hayat Khan, Extra Assistant Settlement Officer, Munsif, 1st class.
17061-C-Gaz. ...	Ditto	Appoints Malik Muhammad Hayat Khan, Extra Assistant Settlement Officer, Collector under Land Acquisition Act, I of 1894.
17061-D-Gaz. ...	Ditto	Empowers Malik Muhammad Hayat Khan, Extra Assistant Settlement Officer, to hear and determine the suits mentioned in the first group in sub-section (3) of section 77 of the Punjab Tenancy and Land Revenue Act of 1887.

**GLOSSARY OF VERNACULAR WORDS NOT EXPLAINED
IN THE TEXT.**

Vernacular term.	Meaning.
Abádi ...	Village site.
Báchh ...	Distribution of village revenue over holdings.
Bájra ...	Bulrush millet.
Baniya ...	Shop-keeper and money-lender.
Banjar ...	Waste but culturable land.
Batái ...	Rent taken in kind by division of produce.
Bhoj ...	A group of hill hamlets.
Bigha ...	A measure of land, here $\frac{5}{16}$ ths acre.
Dhán ...	Rice.
Fard ...	A list.
Ghí ...	Clarified butter.
Girdawari ...	Crop inspection.
Ghair mumkin darya ...	Land unculturable on account of river action.
Hadd barári ...	Boundary cases.
Inám ...	A grant of land revenue to a rural notable.
Inám-dár ...	} One who receives an <i>inám</i> .
Inámkhwár ...	
Jágir ...	An assignment of land revenue.
Jagirdár ...	One who holds a <i>jágir</i> .
Jamabandi ...	Quadrennial records-of-rights.
Kárkun ...	Here-Headman of a <i>bhoj</i> .
Khálsá ...	Revenue demand not assigned to grantees but paid to Government.
Kharába ...	A crop which has failed partly or totally.
Kharíf ...	Autumn harvest.
Khárij-báchh ...	Any land not assessed in distributing revenue over holdings, etc.
Kháta ...	A sub-division of <i>khawat</i> .
Khatauni ...	A slip showing holdings.
Khewat ...	The record in the <i>jamabandi</i> showing the ownership rights of each owner or group of owners separately along with details of each parcel of land cultivated by himself, his tenants, mortgagees, etc., each such detail or holding constituting a <i>kháta</i> .
Khud-kásht ...	Land cultivated directly by the owner or his servants is said to be <i>khud kásht</i> (lit self-cultivated).
Lambardár ...	A village headman.
Mahál ...	An estate or village separately assessed to land revenue.
Malba ...	A village tax for local purposes.
Málikána ...	Proprietary dues.
Másh ...	A pulse.
Massar ...	A lentil.
Moth ...	A pulse.
Muáfi ...	A revenue-free grant of land (given or held on account of some service or for religious purposes).
Muáfídár ...	One who holds a <i>muáfi</i> .
Mujmalli ...	Combined, composite.
Munj ...	A pulse.
Musavi ...	A mapping sheet.
Mutafarra-q-málikán ...	Miscellaneous owners.
Nabri-parta ...	Canal rate.
Naqsha chábát ...	Record of wells and rights thereto.
Pachotra ...	Percentage of land revenue given to the village headmen in return for duties performed by them.
Parganah ...	A part of a district.
Patwári ...	Village accountant.
Part Sarkár ...	That copy of the village map which is kept at head-quarters.
Qánúngo ...	A revenue official who supervises the <i>patwáris</i> .
Qismwár parta ...	Land revenue rate determined according to quality of land.
Rabi ...	Spring harvest.
Riwáj-i-'Am ...	Statement of social customs of the district and its main divisions.
Sadr ...	Head-quarters.
Sufdposh ...	A local notable.
Sarkár ...	Government
Sarsari parta ...	Summary rate (not distinguishing between various classes of land).
Ser ...	A measure of weight = 2 lbs.
Shajra Nash ...	Genealogical tree.

**GLOSSARY OF VERNACULAR WORDS NOT EXPLAINED
IN THE TEXT—CONCLUDED.**




Vernacular term.	Meaning.
Sihhat indaráj ...	Correction of entries
Tahsíl ...	Revenue sub-division of a district.
Tahsildár ...	Officer in charge of a <i>tahsíl</i> .
Tak mál ...	Process of completing and checking the record-of-rights.
Tárámíra ...	An oilseed.
Tattima Shajra ...	Supplementary map.
Til ...	An oilseed.
Toria ...	An oilseed.
Wájib ul-'arz ...	Village administration paper in which are recorded local customs menials' dues, etc., etc.
Zaildár ...	A circle headman superior to the village headman in his circle.
Zamíndar ...	A landowner. Here generally equivalent to peasant proprietor.
Zíri ...	A superior quality of rice.

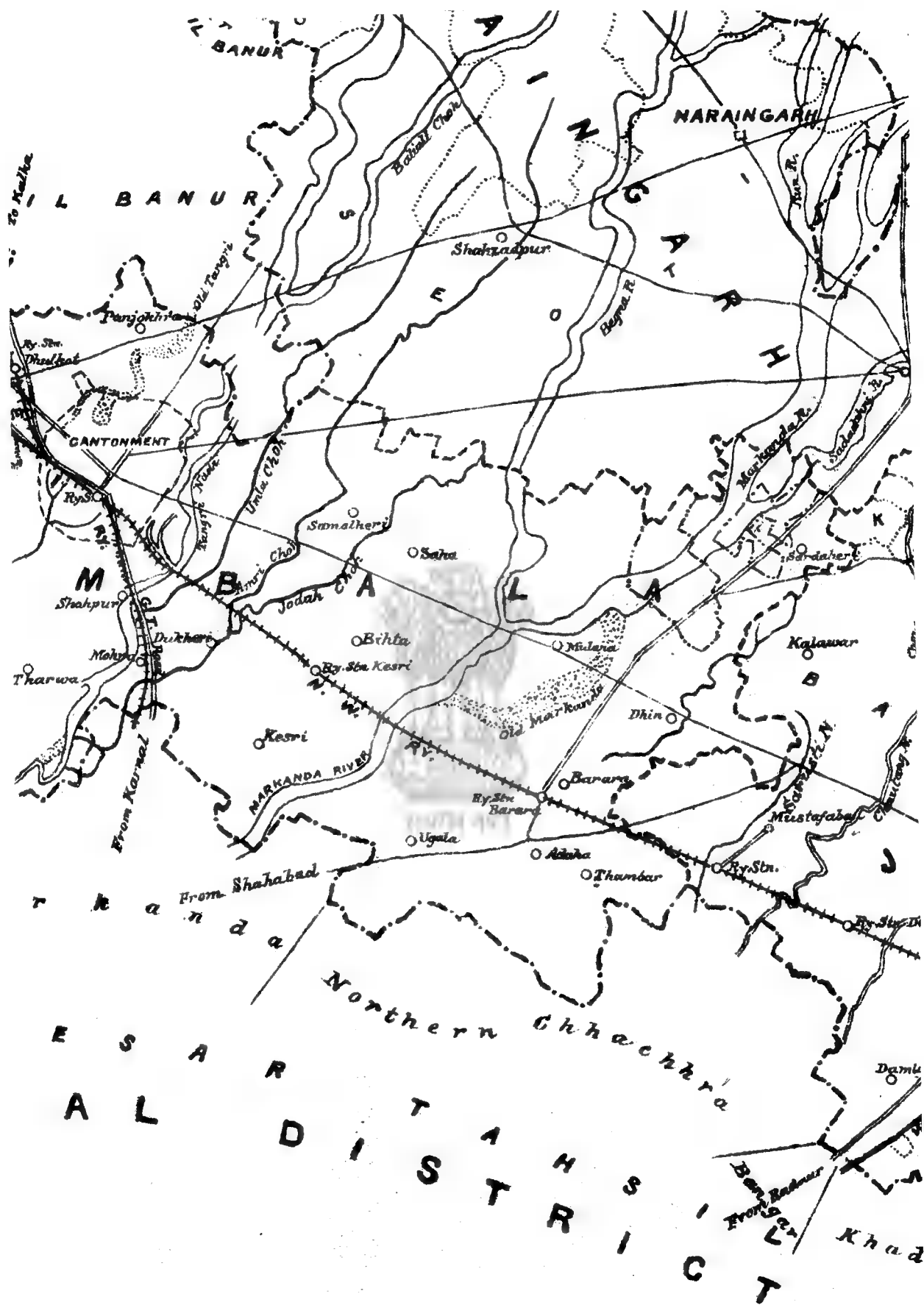


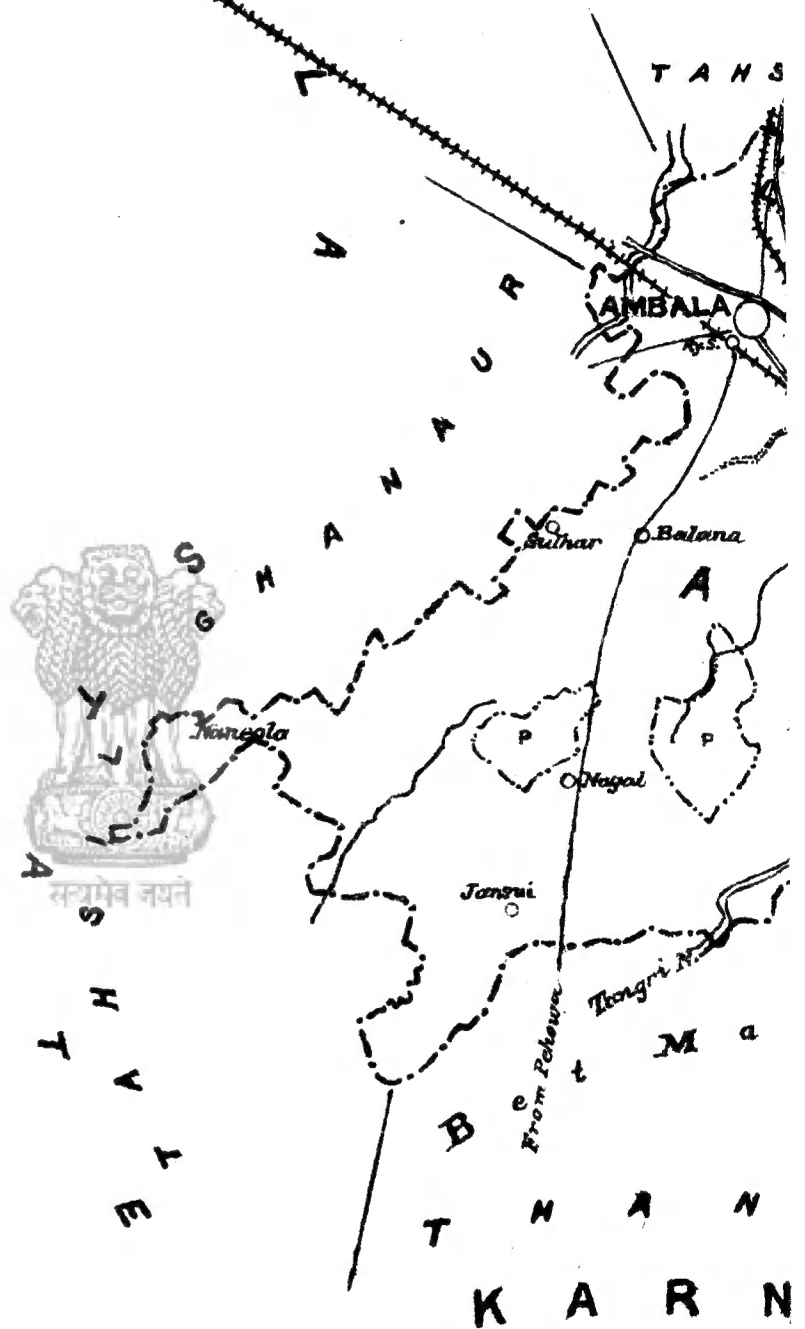
AMBALA

1 MILES

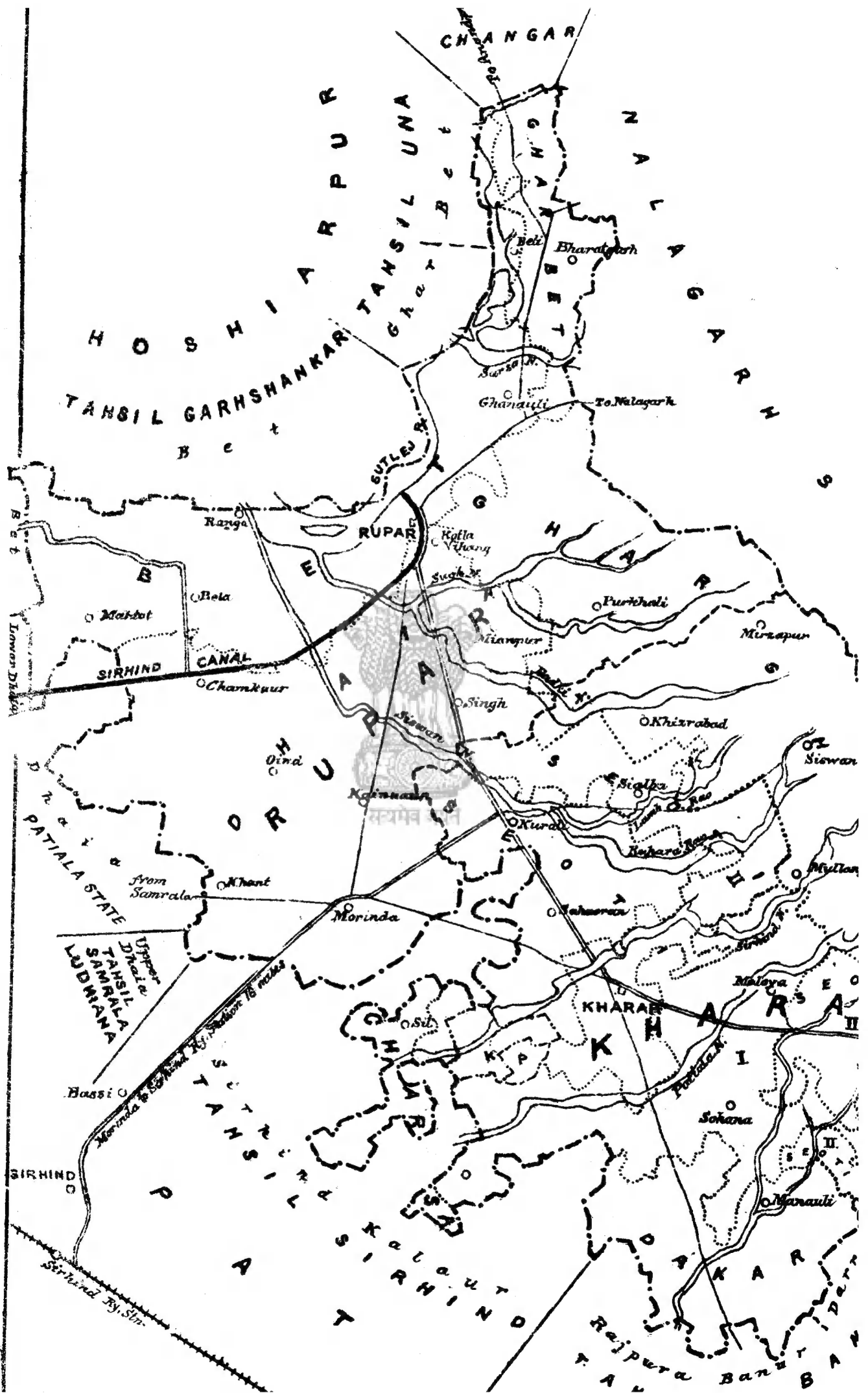


REFERENCES	
<i>Metalled Road</i>	—
<i>Unmetalled Road</i>	- - -
<i>Tahsil Boundary</i>	- - - - -
<i>State Boundary</i>	- - - - -
<i>Assessment Circle</i>	- - - - -
<i>Railway line with Station</i>	—  —
<i>River & Nala</i>	
<i>Kalsia State</i>	K
<i>Patiala State</i>	P
<i>Lake</i>	





Abdul Rashid
Mapper



DISTRICT A

SCALE 1 INCH = $\frac{40}{1000}$ MILES

